

February 29, 2008 DIR-08-017

Mr. Nabil Al-Hadithy City of Berkeley Toxics Management Division 2118 Milvia Street Berkeley, CA 94704

Dear Mr. Al-Hadithy:

We are enclosing our annual submittal of Lawrence Berkeley National Laboratory's (LBNL's) "Hazardous Materials Business Plan." Please note the following with respect to the enclosed documents:

LBNL is a federal facility owned by the Department of Energy (DOE). In certain areas of environmental regulation, Congress has directed federal facilities to comply with state and local requirements and pay reasonable service charges. In the area of hazardous materials planning and reporting, however, while DOE facilities must comply with federal Emergency Planning and Community Right-to-Know Act (EPCRA) requirements pursuant to an Executive Order, no waiver of federal sovereign immunity from state and local regulation has occurred. Despite the lack of a sovereign immunity waiver, LBNL voluntarily complies with state requirements for hazardous materials planning and reporting. The attached report provides the information required by the state regulations.

- (1) Hazardous materials are reported if they meet or exceed state thresholds, aggregated by building.
- (2) Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Heath Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category.
- (3) Hazardous waste reporting also is consistent with state requirements. Waste quantities located at the Hazardous Waste Handling facility have been aggregated, and quantities exceeding the state threshold are reported. Volumes of mixed waste have been considered for this reporting category due to their hazardous waste component.

Mr. Nabil Al-Hadithy Page 2 March 1, 2006

> (4) Appendix A and Appendix B are the only two forms required by the California Code of Regulations, Title 19. Additional information included in the submittal is being presented voluntarily.

We trust that this information will assist your office in serving the needs of the community regarding hazardous material disclosure information.

Please feel free to contact Jack Salazar (510) 486-6571 directly should you have any questions or wish to discuss this matter further.

Sincerely,

Howard K. Hatayama Acting Director

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Environment, Health and Safety Division

Enclosures

cc: Kim Abbott, U.S. Department of Energy, Berkeley Site Office Dan Lunsford, Berkeley Lab Emergency Management Ron Pauer, Berkeley Lab Environmental Services Group Leader Paul Blodgett, Berkeley Lab Health and Safety Deputy Nancy Rothermich, Berkeley Lab Waste Management Group Leader Gary Piermattei, Fire Prevention Program



City of Berkeley, Toxics Management Division 2118 Milvia Street, Suite 300 Berkeley, CA 94704

-(510)-981-7460-FAX-(510)-981-7470----

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For Dept Use Only - Log In/Date Stamp

(,
Hazardous Materials Business Plan (HMBP)
Cartification Statement

Certification Stat	ement		
I. IDENTI	ICATION		
FACILITY ID# 6 2 6 9 3 4 9 9 8			
BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) E.O. Lawrence Berkeley National Laboratory			3
BUSINESS SITE ADDRESS			103
One Cyclotron Road			
CITY	104	CA	ZIP CODE 105
Berkeley		0.11	94720
			<u> </u>
H. CERTIFICATI			
Check the appropriate boxes below and sign the certification			
☐ INITIAL SUBMITTAL: This new HMBP is being	submitted for	the f	following:
☐ New facility			
Change of ownership			
Change of business address	. 1.1 13	a ann	
ANNUAL CERTIFICATION: I have personally re		MBP	currently on file with your agency, dated
and hereby certify, under penalty of perjury,			late accounts and up to date
 The information contained in the most recent H A copy of the facility's most current Business 			
this certification form.	Owner/Opera	nor re	lentification page is being submitted with
 The facility has not begun handling any hazard 	lous materials	e/hazz	ardous wastes that are not currently listed
on the most recently submitted Hazardous Mate			
There have been no significant changes (1009)			
reported hazardous materials/hazardous waste	e as renorte	d on	the most recently submitted Hazardous
Materials Inventory forms.	a as reported	3 OH	the most recently submitted real data
 The facility's annual waste amounts reported 	ed on the m	ost i	recently submitted Hazardous Materials
Inventory forms are accurate and expected to be	e the same in	the ne	ext vear.
This certification is <u>not</u> being made to mee	et annual inv	entor	v submission requirements of EPCRA.
(EPCRA requires complete annual submissio			
11022).		-	,
✓ CERTIFICATION OF CHANGES/REVISIONS:	This is to c	ertify	that the HMBP has been reviewed and
revisions, amendments and/or additions are nece			
following areas of the HBMP are affected:	-		
✓ Entire HMBP revision			an/Storage Map(s)
☐ Business Activities page			sponse Plan/Contingency Plan
Business Owner/Operator Identification page	☐ Other (Sp	ecify)	:
☐ Hazardous Materials Inventory	<u></u>		
I hereby certify, under penalty of perjury, that the information con	tained in this I	lazaro	dous Materials Business Plan is, to the best of
my knowledge, true and correct. I understand that I will be requ	ired to show	proof	of compliance during any facility inspection
conducted by City, County, State, or Federal authorities. I und			
business name, or operations (closure, addition of undisclosed haza	irdous material	ls or h	azardous wastes, and/or contingency planning
provisions), a notification of such must be made to Toxics Manager		within	30 days of the change.
SIGNATURE OPENWARE OPERATOR OF DESIGNATED REPRESENTATIVE	DATE		
	February 29,	2008	
NAME OF SIGNER (print)	TITLE OF SIGNER	1000	Ni. data a
oward Hatayama	Director, EH	1&S D	vivision
Agency Use Only □ HMBP accepted as submitted □ HMBP requires revisions – Let	ter sent		
HMBP ACCEPTED:/ BY:			



Planning and Development Department Toxics Management Division

SPECIAL HAZARDS REGISTRATION

According to BMC Title 15, the following special hazards require registration and compliance with the ordinance. For copies of the compliance requirements, please contact your inspector for a copy of the ordinance.

Facility Name: E.O. Lawrence Berkeley National Laboratory

Facility Address: 1 Cyclotron Road, Berkeley, CA 94720 Phone: 510-486-5512

I. Etiological Agents Disclosure:

Etiological agents can be microorganisms which cause disease. The BMC defines an etiologic agent as any of the following:

- An infectious substance, which is any viable microorganism, or its toxin, which causes or may cause disease in humans or animals, and includes those agents listed in 42 CFR Section 72.3 or the regulations of the Department of Health and Human Services, or any other agent that causes or may cause severe, disabling or fatal disease;
- 2 A diagnostic specimen, which is any human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, being handled for purposes of diagnosis;
- A biological product, which is any material prepared and manufactured in accordance with the provisions of 9 CFR parts 102, 103, or 104, or 21 CFR parts 312 or 600-680; and
- 4 A medical waste as defined in California Health and Safety Code Section 25023.2.

^tf your facility stores or handles an etiological agent on site, you must report the agent name, quantity and storage location to the Toxics Management Division.

Biological materials at this site are handled in multiple buildings at either Biosafety Level 1 (e.g., standard LBNL lab) or Biosafety Level 2 containment (e.g., lab with biosafety cabinet), respectively. Biosafety Level 1 is suitable for work involving well-characterized agents not known to consistently cause disease in healthy adult humans and of minimal potential hazard to laboratory personnel or the environment. Biosafety Level 2 is suitable for work involving agents of moderate potential hazard to personnel and the environment. Common biological materials include Risk Group 1 microorganisms, established human cell cultures, attenuated (e.g., replication deficient) viral vectors, and very limited samples of human tissue. Some medical waste as defined by California Health and Safety Code 25023.2 is generated. Risk Group 2 human pathogens are used in very few Biosafety Level 2 laboratories. Several select agent bacteria are used in one Biosafety Level 2 laboratory in accordance with 42 CFR 73. No agents or materials that require Biosafety Level 3 or 4 containment are used at this site.

II. Radioactive Materials:

Any quantity of Radioactive Materials must be reported on the Hazardous Materials Inventory-Chemical Description page of the Hazardous Materials Business Plan.

Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Health Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category

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City of Berkeley, Toxics Management Division

UNIFIED PROGRAM CONSOLIDATED FORM - FACILITY INFORMATION

BUSINESS ACTIVITIES

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<u></u>					ır facility.							If	Yes,	pleas	complete these pages of the UPCF
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	ade liquids in AS tity for an extreme											<u></u>	NO	4	CHEMICAL DESCRIPTION (OES 2731)
	endix A or B; or h														
	gency plan is requ									icii uii					
	NDERGROUND							10 01 70	•		·-				UST FACILITY (Formerly SWRCB Form A)
1.	Own or operate t										✓ YES		NO	5	UST TANK (one page per tank) (Formerly Form B)
2.	Intend to upgrade						s?				☐ YES	V	NO	ő	UST FACILITY
															UST TANK (one per tank)
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	BOVE GROUND	PET	rroi	LEU	M STOR	AGE '	TAN	KS (AS	rs)		1 . 12.3		110	,	OST 17111R (cluster portion—unic page per talik)
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3.	Treat hazardous	wasto	2 On 5	site?							☑ YES		NO	11	ONSITE HAZARDOUS WASTE TREATMENT –
															FACILITY (Formerly DTSC Forms 1772) ONSITE HAZARDOUS WASTE TREATMENT –
															UNIT (one page per unit) (Formerly DTSC Forms 1772 A,B,C,D
	The second making							4 . 65				_			and L)
4.	Treatment subject Permit by Rule a							nts (for			☑ YES	Ш	NO	12	CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form (232)
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1	peremorate mater	11415.													SPREADSHEET
3.	Below E.1. thresh	holds	abo	ve, b	ut general	te any	/ qua	ntity of l	ıazaro	lous	✓ YES		NO	15	HAZARDOUS WASTE GENERATOR
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	hunto magnig hi	OCC2	au12)	•											DESCRIPTION (OES 2731) OR SPREADSHEET

UPFC (Rev. 1/26/05) OES FORM (1/99)

City of Berkeley, Toxics Management Division UNIFIED PROGRAM CONSOLIDATED FORM — FACILITY INFORMATION

BUSINESS OWNER/OPERATOR IDENTIFICATION

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BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)	1 1			<u></u>	3 BUSINES	S PHONE	102
E.O. Lawrence Berkeley National Laboratory					ļ		
BUSINESS SITE ADDRESS					····		103
One Cyclotron Road							
CITY			10		ZIP CODE		105
Berkeley				CA	94720		
DUN & BRADSTREET				106	SIC CODE (4 di	git #)	107
62-693-4998					8731		
COUNTY							108
Alameda							
BUSINESS OPERATOR NAME				109		RATOR PHONE	110
					(510) 486-	5514	
· II	i. Busi	NESS	OWN	IER			
OWNER NAME				111	OWNER PHON		112
US Dept. of Energy - Lawrence Berkeley Na	ational La	borat	ory Sit	e Office_	(510) 486-	4353	
OWNER MAILING ADDRESS	_						113
One Cyclotron Road, Mail Stop 90R1023	3						
CITY			114	STATE	115	ZIP CODE	116
Berkeley				CA -		94720-8123	
III. EN	VIRON	MEN	TAL (
ONTACT NAME				117	CONTACT PHO		118
Ronald Pauer					(510) 486-	7614	
CONTACT MAILING ADDRESS							119
One Cyclotron Road, Mail Stop 85B0198							122
CITY			120	STATE	121	ZIP CODE	122
Berkeley				CA		94720-8272	
-PRIMARY- IV. E	MERG	ENC	Y COI	NTACTS		-SECONDAR	Y -
NAME	123	NAM			•		128
Emergency Contact Team		Ro	icky Sa	unders			
TITLE	124	TITL	_				129
LBNL 24/7 Emergency Contact Team					es Manager		
BUSINESS PHONE	125	1	NESS PH				130
Non-emergency (510) 486-4050			10) 486				
24-HOUR PHONE	126	1	OUR PHO				131
Emergency (510) 486-6999		<u> </u>		2-1517 ce	11		133
PAGER#	127	PAGI	ER#				132
		<u></u>					
ADDITIONAL LOCALLY COLLECTED INFORMATION:							
Certification: Bused on my inquiry of those individuals responsi am familiar with the information submitted and believe the inform	ble for obtain	ning the	informati	on, I certify t	inder penalty of la	w that I have personally	examined and
SIGNATURE OPTOWNER/OPERATION OF DESIGNATED REPRESENT			DATE	134	NAME OF DOC	UMENT PREPARER	135
SIGNATURE CONTINUED TERRESEN			2/29/		Jack Sala		
AME OF SIGNER (print)		136	3	F SIGNER	J Caok Cala		137
Howard Hatayama					S Division		

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Appendix B

Abbreviations

COLUMNS 13 & 15

EX Explosive

FS Flammable solid

FL Flammable liquid

FG Flammable gas

C Combustible liquid

NFG Nonflammable gas

W Water reactive

UR Unstable reactive

OX Oxidizer

OXP Organic peroxide

PYR Pyrophoric

CYR Cryogenic

COR Corrosive

RAD Radioactive

IRR Irritant

OHH Other health hazard

TOX Toxic

HTOX Highly toxic

COLUMNS 18

A Acute health hazard

C Chronic health hazard

F Fire hazard

R Reactive hazard

P Pressure release hazard

COLUMNS 26

AGT Above ground tank

UGT Underground tank

ATB Tank in building

SD Steel drum

PD · Plastic drum

CAN Can

CAR Carboy

SI Silo

FD Fiber drum

BAG Bag

BOX Box

CYL Cylinder

GB Glass bottle

TB Tote bin

TW Tank wagon

RC Rail

TEMPERATURE/PRESSURE

1 Ambient

2 High

3 Low

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1 A B B 1 E.O. Lawrence Berkeley National Laboratory 2 9 8 & 30 3 9 8 & 30 4 Name Chemical 5 Common Name 55 DIESEL FUEL (components) 56 DIESEL FUEL Accelylene 59 ACETYLENE Accelylene 60 ARGON Argon 61 HELIUM Hellum 62 NITROGEN, LIQUID Nitrogen 63 ACETYLENE Argon 64 BUILDING 48 Argon 65 DIESEL FUEL Argon 66 DIESEL FUEL Argon 67 Building 50 Complex Carbon Dioxide 77 CARBON DIOXIDE Carbon Dioxide 77 CARBON DIOXIDE Carbon Dioxide 77 CARBON DIOXIDE Carbon Dioxide 77 WILLEDIOR Argon	Cas N Cas N 000169-00-0 7782-44-7 74-86-2 7440-59-7 7727-37-9 000169-00-0 000169-00-0	N N N N N N N N N N N N N N N N N N N		2	17 17 17 17 17 17 17 17	18 18 Fed Haz Cat P P P P P P P P P P P P P P P P P P P	State Code		21 21 Largest Cont U	22 N Unit D N	23 Max Av Dally De	 	25 26 Ann Waste Cont	27 11 Press	n 82 _
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DIESEL FUEL Common			· ┼ ┤╏╏╏╎╎╬┉┼┪╸┼╏╏╏╏╏╏╏ ┼ ╏╏ ┼┼┼┼							Ш	++-	\Box			Тетр
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BUILDING 46 OXYGEN ACETYLENE ARGON HELIUM NITROGEN, LIQUID BUILDING 48 DIESEL FUEL Building 50 Complex DIESEL FUEL Building 51 (F) GARBON DIOXIDE	7782-44-7 74-86-2 7440-37-1 7440-59-7 7727-37-9 000169-00-0 124-38-9 124-38-9	zzzz z z z z zz			GAS GAS GAS GAS GAS GAS			\bot							\dashv
OXYGEN ACETYLENE ARGON HELIUM NITROGEN, LIQUID BUILDING 48 DIESEL FUEL Building 50 Complex DIESEL FUEL Building 51 CARBON DIOXIDE GARBON DIOXIDE	7782-44-7 74-86-2 7440-37-1 7440-59-7 7727-37-9 000169-00-0 000169-00-0 124-38-9 124-38-9	zzzz z z z z zz			GAS GAS GAS GAS GAS GAS GAS GAS GAS			\bot	T	4	\dashv			_	
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48 48 1.Complex	7727-37-9 000169-00-0 000169-00-0 124-38-9 124-38-9	z			LIQ LIQ GAS GAS			_			┪	400	ં	_	-
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48 LL Complex IL DXIDE OXIDE	000169-00-0 000169-00-0 124-38-9 124-38-9	z			LIG LIG GAS					-	1				-
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Complex IL DXIDE OXIDE	124-38-9 1727-37-9	zzz			GAS			365	367 G	GAL 3	367	367	AG.	1	-
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OXIDE OXIDE	124-38-9 124-38-9 7727-37-9	zzz			GAS			365	275 G	GAL 2	275	275	AGT	1 1	11
OXIDE (F) OXIDE	124-38-9 124-38-9 7727-37-9	zzz			GAS										
oxide (F) oxide	124-38-9 124-38-9 7727-37-9	zzz		L	GAS										
	124-38-9 7727-37-9	zz		_	GAS			365	150 C	CFT 9	900	900	상	~	-
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	124-38-9	zz	ŀ		GAS			_			\dashv				
	7727-37-9	z	┪		1	ш		365	438 C	CFT 4	438	438	CYL	7	-
Nacional Indicated			프 즈		GAS			365		4	+	730	נֿ	1	+
				1	1			$\frac{1}{1}$	†		+				+
BUILDING 51 (P)	0	+	+	4				250	Т		180	180	ΔGT	-	<u> </u>
DIESEL FUEL	0-00-691000	2 2		1		<u> </u>		202	T		2 2	3 6	A	1	-
79 DIESEL FUEL	0-00-691000	2 2	╁		2 2	- u		3 12	3 5	GA!	1 E	195	AGT		-
JESEL FUEL	2-20-601-000	2	┿	1	1	-		-			+				
CU 1:3773								-							-
Building 53	7440-37-1	2	z	_	GAS	а.		365		1	687	2B9	CYI.	┡	-
NITROGEN FOUND	7440-59-7	z	N CRY	Ь	9.			365	6000	GAL	\vdash	6000	AGT	T 2	4
S.N.O.S.		z	H	Ŀ	GAS			365				219	ζ		-
NITROGEN	7727-37-9	z	돈 이		LIQ			365			\dashv	212	ς	_	-
	1333-74-0	z	N FG		GAS			365			-	244	ζ	_	-
	7440-59-7	z	Н	\dashv	GAS	<u>-</u>		365	244 C		244	244	מלך	2 0	<u></u>
ACETYLENE Acetylene	74-86-2	z	Z Z	4	GAS			365			+	230	5 6	4	- -
	74-85-1	z	┥	4	GAS	1.		365		_	244	244	ב כ	↓	
	77B2-44-7	z	十	4	S G	ľ		202		┵	+	100	5 2	↓	- -
NITROGEN	7727-37-9	 			GAS	1		200			+	à	5	_	╬
			+	-				+		-					-
Building 55	000160 00 0	2	I I	4		<u> </u>		365		┸	+	1000	UGI	-	-
DIESEL FUEL	7797-97-9	z	+	. <u>-</u> <u>-</u>				365	1000	LBS 1	1000	1000	AG	L	4
	7782-44-7	z	× N		GAS			365		Ц	Н	100	CYL	2	-
	74-82-8	z	╁	L	GAS	L		365		Ш	_	20	ζ	_	-
	7440-37-1	z	┝	L	GAS			365	П	Ш	Н	200	ζ	4	-
100 HELIUM Helium	7440-59-7	z	z		GAS			365			\dashv	S	ζ	\perp	-
Z	7727-37-9	z	지 지	Ц	GAS	ď		365	╗	_	99	1300	정	\downarrow	= -

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63	6	8 & 30	10	11	12	13	14	17	18	19	20	21	22		24	25	5 e	27	28
4	Name	Chemical		Trade	-	<u>ဥ</u>			1	$\overline{}$	•	Largest		Max	Ave	1			
ı,	Common	Name	Cas N	Secret	딾	Class	MIX	State	Haz Cat	-	days	Cont	H L	П		Waste (Cont	Press T	Temp
9		(components)								Code									
E8 1	03 Building 56			-															
104	04 OXYGEN	Oxygen	7782-44-7	z	z	ŏ	_	GAS	_		365	230	CFT	298	298		CYL	2	-
103	105 ARGON	Argon	7440-37-1	z	z			GAS	c.		365	250	CFT	250	250		CYL	2	<u> </u>
106	06 HELIUM	Helium	7440-59-7	z	z		l	GAS	Ь		365	230	CFT	230	230		CYL	2	-
107 1	NITROGEN	Nilragen	7727-37-9	z	z	돈		GAS	۵		365	230	CFT	230	230		CYL	2	<u> </u>
108	08 HYDROGEN	Hydrogen	1333-74-0	z	z	5	۵.	GAS	ഥ		365	230	CFT	305	305		CYL	2	-
60	09 P-10 GAS	Argon (90%)	7440-37-1	z	z			GAS	止	-	365	230	CFT	230	230		CYL	2	-
무		Methane (10%)	74-82-8	z	z	F.G	T	GAS	Ľ.		-							_	
=																			
112	Building 058A																-		-
E	TRANSFORMER OIL			z	z	H	<u>a</u> .	g	O		365	2000	GAL	2000	2000		AGT	_	_
1140	OXYGEN	Oxygen	7782-44-7	z	z	ŏ	Г	GAS	٦		365	220	님	220	220		CYL	2	<u> </u>
13	15 ACETYLENE	Acelvlene	74-86-2	z	z	<u> F</u>	H	GAS	ш.		365	220	F	880	880		CYL		<u> </u>
911	CARBON DIOXIDE	Carbon Dioxide	124-38-9	z	z	ŏ		GAS	ш		365	220	HO	440	440		CYL	2	<u> </u>
Ë	SULFUR HEXAFLUORIDE	Sulfur Hexafluoride	2551-62-4	z	z	품		GAS	U		365	220	딩	440	440		CYL	2	—
118/	ARGON	Argon	7440-37-1	z	z			GAS	<u> </u>	· ·	365	220	CFT	440	440		CYL	2	—
119	HELIUM	Helium	7440-59-7	z	z	:	<u>a</u>	GAS	4		365	220	CFT	220	220		CYL	2	_
120	NITROGEN	Nitrogen	7727-37-9	z	z	품		GAS	Ь		365	220	CFT	440	440		CYL	2	1
121	NITROGEN, LIQUID	Nilrogen	7727-37-9	z	z	HHO		LIQ	Ь		365	1646	GAL	1646	1646	_	4GT	2	4
122	HELIUM, LIQUID	Helium	7440-37-1	z	z	맫	\vdash	LIQ	Ь		365	1646	GAL	1646	1646	, , , , ,	AGT	2	4.
123	CARBON DIOXIDE	Carbon Dioxide	124-38-9	z	z			GAS	а.		365	1646	GAL	1646	1646		CYL.	23	_
124	DIALA AX OIL	Naphthenic Distillate	64742-53-6	Z	z	FL	MIX	ΠO	C		365	55	GAL	55	55		SD	_	
125		Middle Distillate	265-148-2	Z	z	FL					_								
126		2,6-Di-Terl-Bulyl-P-Cres	204-881-4	Z	z	FL					_								
127																`			
12B	28 Building 058B		- :				. ;		,	•									
129	129 VACUUM PUMP OIL	:	000826-00-0	N	z	IAR	Д	ΓIO	C		365	55	GAL	22	55		gs	_	-
8																			
<u> </u>	31 Building 62									2				٠					
132	32 ARGON	Argon	7440-37-1	z	z		一	GAS	_		365	999	CFT	7405	7405		CYL (2	<u>_</u>
88	CARBON DIOXIDE	Carbon Dioxide	74-82-8	z	z	ě	Г	GAS	u.		365	200	CFT	200	200		CYL	2	-
134	METHANE	Methane	74-82-8	z	z	ភ	Г	GAS	ш		365	200	L C	204	204		CYI.	2	_
135	35 HELIUM	Helium	7440-59-7	z	z			GAS	Ь		365	220	CFT	2864	2864	_	CYL	5	1
136	36 HYDROGEN	Hydrogen	1333-74-0	z	z	FG	_	GAS	4		365	500	CFT	4389	4389		CYL (5	_
137	NITROGEN	Nitragen	7727-37-9	Z	Z	애	П	GAS	Ъ		365	220	CFT	2173	2173	_	CYL	5	-
89	38 OXYGEN	Oxygen	7782-44-7	Z	z	XO	д	GAS	Щ		365	220	CFT	1248	1248		CYL	2	-
139	39 NITROGEN, LIQUID	Nitrogen	7727-37-9	N	Z	CRY	Ь	LIQ	Ь		365	640	GAL	640	640	_	AGT	CV.	v
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Chemical		Trade		ပ္	Pure		Fed	-	L	Largest			Ave		_	_
Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	_	days	Cont	ti Di	_	Daily	Waste	Cont	Press Temp
(components)								Code				1		-		$\frac{1}{1}$
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	000169-00-0	z	z	HH	۵	g	Ŀ		365	55	GAL	55	55		AGT	+
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Methane	74-82-8	z	z	FG	١ -	GAS	Ŀ	,	365	200	CFT	201	201		CYL.	2
Freans		z	z	CRY	M	GAS	a_		365	200	CFT	400	400		CYL	2
Sulfur Hexalluoride	2551-62-4	z	z	문	Ъ	GAS	၁		365	748	CFT	2252	2252		CYL	. 2
Hellum	7440-59-7	Z	z		Ь	GAS	Ь		365	500	CFT	200	200		CYL	2
Nitrogen	7727-37-9	z	z	HO.	Ъ	GAS	Ь		365	200	CFT	205	205		CYL	2
Carbon Dioxide	124-38-9	z	z		Д.	GAS			365	200	딩	400	498		C, II	2
Oxygen	77B2-44-7	Z	N	χo	д	GAS	ш.		365	251	CFT	501	501		CYL	2
Carbon Monoxide	630-08-0	z	z	χoτ	۵.	GAS	٧		365	200	CFT	500	200		CYL	2
	7440-019	z	z		XIIX	GAS	а.		365	200	CFT	500	200		CYL	2
Krypton	7439-90-9	z	z													_
Sulfur Hexalluoride	2551-62-4	z	z	풀	α.	9	ပ		365	748	GAL.	868	868		CYL	2
Carbon Dioxide	124-38-9	Z	z		XIIX	<u>a</u>	Ь		365	150	GAL	150	150		CYL	2
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	000169-00-0		z	H	_	9	ш		365		GAL	250	220	1	AGI	
	000169-00-0		2	至	2		<u>.</u>		365		GAL GAL	9000	9000		AGI	<u>-</u>
Ethyne	74-86-2	2	z z	7 8	2.	GAS	LL		car car	Ŧ	200	5 5	5 5		֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	N C
Oxygen	//BZ-44-/	2 2	z	š		מאַס	L [303		2	000	2 2		1 2	u c
Carbon Dioxide	124-38-9	2 2	z	70,1	1. E	2 5	ı. «		202		֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	אַחכאַ	2002	:	7 5	u c
Carbon Monoxide	7440-08-0	2 2	2 2	5	<u>.</u> D	מאט מ	۵ ک		365	101	- K	3 5	3 5			u [
Nitrogen	7727-37-9	2 2	z	王		GAS	. n.		365	50.5	BS	20.	· 5		CYL	1 21
Hydronen	1333-74-0	z	z	9	n.	GAS	. Ш		365	20	BS	100	108		CYL	C/J
																-
														:		
Ardon	7440-37-1	z	z		h.	GAS	۵.		365	433	CFT	1597	1597		CYL	2
Methane	74-82-8	z	z	5	_	GAS	ш		365	222	CFT	527	527		CYL	2
		z	z		Σ	GAS	_		365	200	F	200	200		7	2
Helium	7440-59-7	z	z		-	GAS	2		365	222	- l	4553	4553		7 K	N C
Hydrogen	1333-74-0	z:	z.	9	١	GAS			365	222	<u>-</u>	2168	2768		7.5	N C
Nitrogen	H27-371	2	2	E 8	. [240			CO .	240	_ L	20/0	2012		1 2	y c
Oxygen	1/82-44-/	z	2 2	3 3	_ -	2 5			202	1496	֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	1406	1496		AGT	1 0
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Mirogen	0.00 031000		2 2				_		365		J V	450	450		AGT	; -
040	74-85-1		2 2		_	2 A G	- 1-		365	1		2002	200		CXI	2
Noon	7440-010	2	Z	7		2 2	. ^		365	1	L	204	204		CYI	2
Ethane	74-84-D	z	2	2		GAS			365	220	L.S	224	224		CYL	22
Carbon Monoxide	630-08-0	z	z	Š	_	GAS	4		365	200	님	272	272		CYL	2
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Охудел	7782-44-7	z	z	ŏ	Ь	GAS	Ц.		365	220	PF.	640	640	1	CYL	2
Methane	74-82-8	z	z	ភ្	م ا	GAS	· L		365	260	<u>.</u>	290	200		2 2	N C
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4 Name	Chemical		Trade		5			ш	State	_	4	_	Max Ave		Ann			
5 Common	Name	Cas N	Secret	EHS	Class	Mix	State	Haz Cat	Waste	days	Cont	H	ily Daily	7	L	Cont Press	Temp	ᆵ
	(components)	1	;	-		7	- 6		Code	L	0	+	┿	0000	-[4	+	Т
	Argon	/440-3/-1	z :	2		1	2 5			COS	1		+		<u>ל</u>	4	- -	Т
	Hellum	1440-59-7	z	2 2	0	\dagger	GAN GAN	- - u	Ī	2 E	270	+	2050	1500	5 6	1	- -	Т
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347 NITRIC ACID, 42 Baume	Nitric Acid	7697-37-2	z	<u>~</u>	P VO	O[1	S		365		L	800	400	S	-	-
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354 MPO-180 VACUUM PUMP OIL		000826-00-0		_		017	ပ		365			55	22	S		=
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363 ANHY ISOPROPYL ALCOHOL	Isonronyl Alcohol	67-63-0	z	╀) L		365		<u> </u>	55.	55	S	-	=
364 DELO 400, SAE 30 WT. OIL	Molor Oil	00034-00-0	z	F		OIT	O		365	Γ	<u>].</u>	165	165	S	-	=
5 DTE 24-OIL		003047-00-0	z	┡	Ļ		C		365	Γ	L	275	275	S	-	-
366 DTE-26 OIL		000619-00-0	z	Г	L	ΠD	ပ		365			275	275	S	-	_
367 DTE LIGHT OIL			z	z	IRI P	ΓΙΟ	Ĵ		365	55	GAI.	55	55	SD	-	-
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369 EDM 244 COMMONWEALTH OIL		000034-00-0		┥			ان		365	Т	╛	165	165	S		
370 ISOPROPYL ALCOHOL	Isopropyl Alcohol	67-63-0	z	+	4	a e	<u>.</u>		365			£ 1	g :	מ כ	- -	=
3/1 KEHUSENE	Kerosene	8008-20-6	2 2	╀	70		_ _		395	Τ			110	טמ	- -	- -
373 SHELL MORUNA OIL 220		000034-00-0	z	+	\downarrow		0		365	Т		222	55	S	-	=
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377 ZEP FORMULA-50	Sodium Hydroxide	1310-73-2	z		TOX M	LIQ	C		365			160	160	PD	1	_
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379	Inthanolamine	102-71-6	2 2	+	-	9			1200	T	\ \ \ \		1	6	- -	- -
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8	Laboratory	8 & 30	Chemical	Мате	(components)	5-chloro2-methyl-4-isothiaz 2		Sodium Molybdate 7											Nitrogen				Dioxida					Methane				%¢;		2,4	Ť	0.000.0	Zing - 0.1%	0 004a/	0001%				17-100%			methanol - 3-5%		hydrochloric 0.1-2%		hydrobromic 1-2%		П	sodium hydroxide 3-50%	potassium hydroxide 1-10% 1310-58-3	Chidrotorin >oppin
¥	1 E.U. Lawrence Berkeley National Laboratory	6	4 Name		9		387 222-L-CORROSION INH.	388	389	oon Building 89	Sau Dallallig uz		382	399 Building 83	394 DIESEL FUEL	395	396 Building 84	397 DIESEL FLIFI		300 OXYGEN	Ann NITBOGEN	ADT ADGON		400 DELLIM	וייט דוברוטואו	404	405 Building 85	406 METHANE	407 DIESEL FUEL	108 PHOTO FIXER	409	410	411 SLUDGES W/ METALS	412	413.	414	415 445 OITSEL FLIFE		417 FAGS & CLEANING DEDNIS	919	UGP	421 OIL		423	424	425	92	427 ACIDIC SOLUTIONS	428	429	130	491	432 BASIC SOLUTIONS	133	434 WATEH W/OHGANICS

Page 9 of 10

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UNDERGROUND STORAGE TANKS

- Permits
- UST Monitoring & Emergency Response Plan

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City of Berkeley, Toxics Management Division UNIFIED PROGRAM CONSOLIDATED FORM UNDERGROUND STORAGE TANKS - FACILITY

	(one page per site) Page 1 or 1
/PE OF ACTION ☐ 1. NEW SITE PERMIT ☐ 3. RENEWAL PERMIT ☐ 5	.CHANGE OF INFORMATION
(Check one item only)	cify change local use only 8. TANK REMOVED
6	TEMPORARY SITE CLOSURE 400
I. FACILITY/SIT	E INFORMATION
BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3 FACILITY	
Lawrence Berkeley National Laboratory	
NEAREST CROSS STREET 401	FACILITY OWNER TYPE 4. LOCAL GENCY/DISTRICT*
	☐ 1. CORPORATION ☐ 5. COUNTY AGENCY*
Gayley BUSINESS ☐ 1. GAS STATION ☐ 3. FARM ☐ 5. COMMERCIAL	☐ 2. INDIVIDUAL
TYPE ☐ 2. DISTRIBUTOR ☐ 4. PROCESSOR ☒ 6. OTHER 403	☐ 2. INDIVIDUAL ☐ 0. STATE AGENCY* 402
TOTAL NUMBER OF TANKS Is facility on Indian Reservation or	*If owner of UST is a public agency: name of supervisor of division, section or office which
REMAINING AT SITE trustlands?	operates the UST (This is the contact person for the tank records.)
6 404 \(\sum \) Yes \(\sum \) No 405	Ken Fletcher (510) 486-5770 406
II. PROPERTY OWN	NER INFORMATION
PROPERTY OWNER NAME	407 PHONE 408
Regents of the University of California	David McGraw (510) 486-5551
MAILING OR STREET ADDRESS	409
One Cyclotron Road, Mail Stop 50A-4112, Attention: David	
CITY 410	STATE 411 ZIP CODE 412
Berkeley	CA 94720
PROPERTY OWNER TYPE 1. CORPORATION 2. INDIVIDUAL	☐ 4. LOCAL AGENCY / DISTRICT ☐ 6. STATE AGENCY
☐ 3. PARTNERSHIP	<u> </u>
III. TANK OWNE	R INFORMATION
NK OWNER NAME	414 PHONE 415
United States Department of Energy, Berkeley Site Office	Aundra Richards (510) 486-4345
MAILING OR STREET ADDRESS	416
One Cyclotron Road, Mail Stop 90-1023, Attention: Ms. At	ındra Richards
CITY 417	STATE 418 ZIP CODE 419
Berkeley	CA 94720
TANK OWNER TYPE ☐ 1. CORPORATION ☐ 2. INDIVIDUAL	☐ 4. LOCAL AGENCY / DISTRICT ☐ 6. STATE AGENCY 420
3. PARTNERSHI	□ 5. COUNTY AGENCY ☑ 7. FEDERAL AGENCY
TI BOLDS OF TOYLLIA HISTORY	S CHOD A CIE ELEE A COOYDIE MUNADED
	STORAGE FEE ACCOUNT NUMBER
TY (TK) HQ 44-	Call (916) 322-9669 if questions arise 421
V. PETROLEUM UST FIN	ANCIAL RESPONSIBILITY
INDICATE METHOD(s) ☐ 1. SELF-INSURED ☐ 4. SURETY BOND	☐ 7. STATE FUND ☐ 10. LOCAL GOVT MECHANISM
indicate Method(s) : 1. Self-insured : 4. Suret 1 Bond : 2. GUARANTEE : 5. LETTER OF CREDIT	
☐ 2. GUARANTEE ☐ 3. LETTER OF CREDIT	□ 8. STATE FUND & CPO LETTER □ 99. OTHER. □ 422
	N AND MAILING ADDRESS
Check one box to indicate which address should be used for legal notifications and mailing. Legal notifications and mailings will be sent to the tank owner unless box 1 or 2 is checked.	☐ 1. FACILITY
VII. APPLICAI	NT SIGNATURE
Certification – I certify that the information provided herein is true and accurate to the best of n	ny knowledge.
SIGNATURE OF APPLICANT	DATE / ; 424 PHONE 425
KINT TOL	2/2 6/C8 Robert Fox (510) 486-7327
426	427
AME OF APPLICANT (print)	TITLE OF APPLICANT
Aobert Fox	Environment Specialist
42B	1009 LIDGD A DE CERTIEIC A TE NUIMBER (Facilitation contra
STATE UST FACILITY NUMBER (For local use only)	1998 UPGRADE CERTIFICATE NUMBER (For local use only)

Formerly SWRCB Form A.

Complete the UST - Facility page for all new permits, permit changes or any facility information changes. This page must be submitted within 30 days of permit or facility information changes, unless approval is required before making any changes.

Submit one UST - Facility page per facility, regardless of the number of tanks located at the site. This form is completed by either the permit applicant the local agency underground tank inspector. As part of the application, the tank owner must submit a scaled facility plot plan to the local agency showing the location of the USTs with respect to buildings and landmarks [23 CCR ∋2711 (a)(8)], a description of the tank and piping leak detection monitoring program [23 CCR >2711 (a)(9)], and, for tanks containing petroleum, documentation showing compliance with state financial responsibility requirements [23 CCR ∋2711 (a)(11)].

Refer to 23 CCR ∋2711 for state UST information and permit application requirements.

(Note: the numbering of the instructions follows the data element numbers that are on the UPCF pages. These data element numbers are used for electronic submission and are the same as the numbering used in 27 CCR, Appendix C, the Business Section of the Unified Program Data Dictionary.) Please number all pages of your submittal. This helps your CUPA or local agency identify whether the submittal is complete and if any pages are separated.

- FACILITY ID NUMBER Leave this blank. This number is assigned by the CUPA. This is the unique number which identifies your facility.
- BUSINESS NAME Enter the full legal name of the business.
- 400. TYPE OF ACTION Check the reason the page is being completed. CHECK ONE ITEM ONLY.
- 401. NEAREST CROSS STREET Enter the name of the cross street nearest to the site of the tank.
- 402. FACILITY OWNER TYPE Check the type of business ownership.
- 403. BUSINESS TYPE Check the type of business.
- 404. TOTAL NUMBER OF TANKS REMAINING AT SITE Indicate the number of tanks remaining on the site after the requested action.
- 405. INDIAN OR TRUST LAND Check whether or not the facility is located on an Indian reservation or other trust lands.
- 406. PUBLIC AGENCY SUPERVISOR NAME If the facility owner is a public agency, enter the name of the supervisor for the division, section or office which operates the UST. This person must have access to the tank records.

Complete items 407- 412 for the property owner, unless all items are

the same as the Owner Information (items 111-116) on the Business

Owner/Operator Identification page (OES Form 2730). If the same,

write "SAME AS SITE" in this section.

Complete items 414- 419 for the tank owner,, unless all items are the same as the Owner Information (items 111-116) on the Business

Owner/Operator Identification page (OES Form 2730). If the same,

write "SAME AS SITE" in this section.

- 407, PROPERTY OWNER NAME -
- 408, PROPERTY OWNER PHONE
- 409. PROPERTY OWNER MAILING OR STREET ADDRESS
- 410, PROPERTY OWNER CITY
- 411. PROPERTY OWNER STATE
- 412. PROPERTY OWNER ZIP CODE
- 413. PROPERTY OWNER TYPE Check the type of property ownership.
- 414. TANK OWNER NAME -
- 415. TANK OWNER PHONE
- 416. TANK OWNER MAILING OR STREET ADDRESS
- 417. TANK OWNER CITY
- 418. TANK OWNER STATE
- 419. TANK OWNER ZIP CODE
- 420. TANK OWNER TYPE Check the type of tank ownership.
- 421. BOE NUMBER Enter your Board of Equalization (BOE) UST storage fee account number. This fee applies to regulated USTs storing petroleum products. This is required before your permit application can be processed. If you do not have an account number with the BOE or if you have any questions regarding the fee or exemptions, please call the BOE at (916) 322-9669 or write to the BOE at: Board of Equalization, Fuel Taxes Division, P.O. Box 942879, Sacramento, CA 94279-0030.
- 422. PETROLEUM UST FINANCIAL RESPONSIBILITY CODE Check the method(s) used by the owner and/or operator in meeting the Federal and State financial responsibility requirements. CHECK ALL THAT APPLY. If the method is not listed, check "others and enter the method(s). USTs owned by any Federal or State agency and non-petroleum USTs are exempt from this requirement.
- 423. LEGAL NOTIFICATION AND MAILING ADDRESS Indicate the address to which legal notifications and mailings should be sent. The legal notifications and mailings will be sent to the tank owner unless the facility (box 1) or the property owner (box 2) is checked.
 - SIGNATURE OF APPLICANT The business owner/operator of the tank facility, or officially designated representative of the owner/operator, shall sign in the space provided. This signature certifies that the signer believes that all the information submitted is accurate and complete.
- 424. DATE CERTIFIED Enter the date that the page was signed.
- 425. APPLICANT PHONE Enter the phone number of the applicant (person certifying).
- 426. APPLICANT NAME Enter the full printed name of the person signing the page.
- 427. APPLICANT TITLE Enter the title of the person signing the page.
- 428. STATE UST FACILITY NUMBER Leave this blank. This number is assigned by the CUPA as follows; the number is composed of the two digit county number, the three digit jurisdiction number, and a six digit facility number. The facility number must be the same as shown in item 1.
- 429. 1998 UPGRADE CERTIFICATE NUMBER Leave this blank. This number is assigned by the CUPA.

UNIFIED PROGRAM CONSOLIDATED FORM TANKS

UNDERGROUND STORAGE TANKS - TANK PAGE 1

(Two pages per tank)

TYPE OF ACTION
(Check one itemonis) S 3. RENEWAL PERMIT (Specify reason) (Specify reason) STE BUSINESS NAME (Same as FACILITY NAME or DBA — Doing Business As) 3. FACILITY ID: STANK REMOVED BUSINESS NAME (Same as FACILITY NAME or DBA — Doing Business As) 3. FACILITY ID: STANK REMOVED LAWRENCE Business As Date of DBA — Doing Business As) 3. FACILITY ID: STANK REMOVED LOCATION WITHIN SITE (Optional) S
Specify reason CSpecify CSPECIFIC
BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) Lawrence Berkeley National Laboratory LOCATION WITHIN SITE (Optional) Building 2 - North Side I. TANK DESCRIPTION (A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.) TANK ID# 432. TANK MANUFACTURER
Lawrence Berkeley National Laboratory
Building 2 - North Side
I. TANK DESCRIPTION (A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.) TANK ID # 432 TANK MANUFACTURER 433. COMPARTMENTALIZED TANK
I. TANK DESCRIPTION (A scaled plot plan with the location of the UST system including buildings and landmarks shall be submitted to the local agency.) TANK ID # 432 TANK MANUFACTURER 433. COMPARTMENTALIZED TANK
TANK ID # 432
TANK ID# 432. TANK MANUFACTURER 433. COMPARTMENTALIZED TANK
DATE INSTALLED
YEAR/MO 1,000 N/A 1,000 N/A
1,000 N/A
ADDITIONAL DESCRIPTION (For local use only) 438.
TANK USE 439. PETROLEUM TYPE 440.
TANK USE 439. PETROLEUM TYPE 440. 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type) 1b. PREMIUM UNLEADED 2. LEADED 5. JET FUEL 2. NON-FUEL PETROLEUM 1c. MIDGRADE UNLEADED 4. GASOHOL 99. OTHER: 3. CHEMICAL PRODUCT COMMON NAME (from Hazardous Materials Inventory page) 441. CAS# (from Hazardous Materials Inventory page) 442. 442. CAS# (from Hazardous Materials Inventory page) 443. CAS# (from Hazardous Materials Inventory page) 444.
TANK USE 439. PETROLEUM TYPE 440. 1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type) 1b. PREMIUM UNLEADED 2. LEADED 5. JET FUEL 2. NON-FUEL PETROLEUM 1c. MIDGRADE UNLEADED 4. GASOHOL 99. OTHER: 3. CHEMICAL PRODUCT COMMON NAME (from Hazardous Materials Inventory page) 441. CAS# (from Hazardous Materials Inventory page) 442. 442. CAS# (from Hazardous Materials Inventory page) 443. CAS# (from Hazardous Materials Inventory page) 444.
1. MOTOR VEHICLE FUEL (If checked, complete Petroleum Type) 1a. REGULAR UNLEADED 2. LEADED 5. IET FUEL (If checked, complete Petroleum Type) 1b. PREMIUM UNLEADED 3. DIESEL 6. AVIATION GAS 2. NON-FUEL PETROLEUM 1c. MIDGRADE UNLEADED 4. GASOHOL 99. OTHER: 3. CHEMICAL PRODUCT COMMON NAME (from Hazardous Materials Inventory page) 441. CAS# (from Hazardous Materials Inventory page) 68476346
(If checked, complete Petroleum Type) □ 1b. PREMIUM UNLEADED □ 3. DIESEL □ 6. AVIATION GAS □ 1c. MIDGRADE UNLEADED □ 4. GASOHOL □ 99. OTHER: □ 3. CHEMICAL PRODUCT □ 4. HAZARDOUS WASTE (Includes Used Oil) □ 95. UNKNOWN □ 1b. PREMIUM UNLEADED □ 4. GASOHOL □ 99. OTHER: □ 441. CAS# (from Hazardous Materials Inventory page) □ 68476346 □ 68476346
□ 2. NON-FUEL PETROLEUM □ 1c. MIDGRADE UNLEADED □ 4. GASOHOL □ 99. OTHER: □ 3. CHEMICAL PRODUCT
□ 3. CHEMICAL PRODUCT □ 4. HAZARDOUS WASTE (Includes Used Oil) □ 95. UNKNOWN □ 1. COMMON NAME (from Hazardous Materials Inventory page) □ 441. CAS# (from Hazardous Materials Inventory page) □ 68476346 □ 68476346
1 4. HAZARDOUS WASTE COMMON NAME (HORR HAZARDOUS WASTE (Includes Used Oil) 3 95. UNKNOWN COMMON NAME (HORR HAZARDOUS WASTE) 68476346
(Includes Used Oil) j 95. UNKNOWN
TYPE OF TANK
TANK MATERIAL – primary tank
(Check one item only)
REINFORCED PLASTIC (FRP) W/100% METHANOL TANK MATERIAL – secondary tank
(Check one item only) 2. STAINLESS STEEL 4. STEEL CLAD W/FIBERGLASS 9. FRP NON-CORRODABLE JACKET 99. OTHER
REINFORCED PLASTIC (FRP) 10. COATED STEEL
TANK INTERIOR LINING 1. RUBBER LINED 3. EPOXY LINING 5. GLASS LINING 95. UNKNOWN 446. DATE INSTALLED 447.
OR COATING 2. ALKYD LINING 4. PHENOLIC LINING 6. UNLINED 99. OTHER
(Check one item only) OTHER CORROSION
PROTECTION PROTECTION 4. IMPRESSED CURRENT 99. OTHER 99. OTHER
SPILL AND OVERFILL YEAR INSTALLED 450. TYPE 451. OVERFILL PROTECTION EQUIPMENT: YEAR INSTALLED 452.
(Check all that apply) ☐ 1. SPILL CONTAINMENT 1988 ☐ 1. ALARM Feb '03 ☐ 3. FILL TUBE SHUT OFF VALVE 1988 ☐ 2. BALL FLOAT ☐ 4. EXEMPT
 ∑ 2. DROP TUBE 1988
IV. TANK LEAK DETECTION
(A description of the monitoring program shall be submitted to the local agency.)
IF SINGLE WALL TANK OR TANK WITH BLADDER 454. (Check all that apply) (Check one item only)
(Check all that apply) 1. VISUAL (EXPOSED PORTION ONLY) 5. MANUAL TANK GAUGING (MTG) 1. VISUAL (SINGLE WALL IN VAULT ONLY)
☐ 2. AUTOMATIC TANK GAUGING (ATG) ☐ 6. VADOSE ZONE ☑ 2. CONTINUOUS INTERSTITIAL MONITORING
☐ 3. CONTINUOUS ATG ☐ 7. GROUNDWATER ☐ 3. MANUAL MONITORING
□ 4. STATISTICAL INVENTORY RECONCILIATION □ 8. TANK TESTING
(SIR) + BIENNIAL TANK TESTING 99. OTHER
(31K) + DIENNIAL INVA LEGITAG
V. TANK CLOSURE INFORMATION / PERMANENT CLOSURE IN PLACE ESTIMATED DATE LAST USED (YR/MO/DAY) 455. ESTIMATED QUANTITY OF SUBSTANCE REMAINING 456. TANK FILLED WITH INERT MATERIAL? 457.

UST - Tank Form Page 1 Instructions (Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to making changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tank form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 430. TYPE OF ACTION Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
- 431. LOCATION WITHIN SITE You may use this space to describe the location of the tank within the facility.
- 432. TANK ID NUMBER If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
- 433. TANK MANUFACTURER Enter the name of the company that manufactured the tank.
- 434. COMPARTMENTALIZED TANK Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
- 435. DATE TANK INSTALLED Enter the year and month the tank was installed.
- 436. TANK CAPACITY Enter the tank capacity in gallons.
- 437. NUMBER OF TANK COMPARTMENTS If the tank is compartmentalized, enter the number of compartments.
- 438. ADDITIONAL DESCRIPTION You may use this space to provide additional tank or location information.
- 439. TANK USE Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
- 440. PETROLEUM TYPE If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
- 441. COMMON NAME For substances other than motor vehicle fuels, enter the common name of the substance stored.
- 442. CAS # For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
- 443. TYPE OF TANK Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
- 444. TANK MATERIAL (PRIMARY TANK) Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
- 445. TANK MATERIAL (SECONDARY TANK) Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
- 446. TANK INTERIOR LINING OR COATING Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
- 447. DATE TANK INTERIOR LINING INSTALLED If applicable, enter the date the tank interior lining was installed.
- 448. OTHER TANK CORROSION PROTECTION If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
- 449. DATE TANK CORROSION PROTECTION INSTALLED If applicable, enter the date tank corrosion protection was installed.
- 450. YEAR SPILL AND OVERFILL INSTALLED Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
- 451. TYPE OF SPILL PROTECTION Enter the type of spill containment, drop tube, and striker plate installed.
- 452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
- 453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
- 454. TANK LEAK DETECTION (DOUBLE WALL TANKS) For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
- 455. ESTIMATED DATE LAST USED Complete this section only if the tank was closed in place. Enter the date the tank was last used.
- 456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
- 457. TANK FILLED WITH INERT MATERIAL Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM

TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONST	RUCTION (Check	all that apply)
UNDERGROUND PIPING		ABOVEGROUND PIPING
SYSTEM TYPE ☐ 1. PRESSURE ☐ 2. SUCTION ☐ 3. GI	RAVITY 458.	☐ 1. PRESSURE ☐ 2. SUCTION ☐ 3. GRAVITY 459.
CONSTRUCTION/ ☐ 1. SINGLE WALL ☐ 3. LINED TRENCH ☐ 99. C	THER 460.	☐ 1. SINGLE WALL ☐ 95. UNKNOWN 462.
MANUFACTURER ☑ 2. DOUBLE WALL ☐ 95. UNKNOWN		☐ 2. DOUBLE WALL ☐ 99. OTHER
MANUFACTURER	461.	MANUFACTURER 463.
☐ I. BARE STEEL ☐ 6. FRP COMPATIBLE W/100% METHANOL ☐ 1.	BARE STEEL	☐ 6. FRP COMPATIBLE W/100% METHANOL
L Z 3 TABICED 3 3 ZZZZZ L I I C C C C C C C C C C C C C C C C C	STAINLESS STEE	and the second of the second o
☐ 3. PLASTIC COMPATIBLE WITH CONTENTS ☐ 95. UNKNOWN ☐ 3.	PLASTIC COMPA	TIBLE W/ CONTENTS 8. FLEXIBLE (HDPE) 99. OTHER
4.11bbhothas	FIBERGLASS	9. CATHODIC PROTECTION
1 3.31EEF MCDXIIIO D 3. CHINODIC MOTORIO	STEEL W/COATIN	
VII. PIPING LEAK DETECTION (Check all that apply)	(A description of the m	anitoring program shall be submitted to the local agency.) ABOVEGROUND PIPING
UNDERGROUND PIPING SINGLE WALL PIPING 4	66. SINGLE W	ALL PIPING 467.
PRESSURIZED PIPING (Check all that apply):	1	ED PIPING (Check all that apply):
FLECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUN		TRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP
SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION	N SHUT	OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION DIBLE AND VISUAL ALARMS.
+ AUDIBLE AND VISUAL ALARMS. 2. MONTHLY 0.2 GPH TEST		THLY 0.2 GPH TEST
3. ANNUAL INTEGRITY TEST (0.1 GPH)	. —	JAL INTEGRITY TEST (0.1 GPH)
E. S. MANONE INTEGRALL TEST (off Graf)	1 —	Y VISUAL CHECK
CONVENTIONAL SUCTION SYSTEMS	1 -	ONAL SUCTION SYSTEMS (Check all that apply)
☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPIN	·	Y VISUAL MONITORING OF PIPING AND PUMPING SYSTEM
INTEGRITY TEST (0.1 GPH)		
SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):	-	NNIAL INTEGRITY TEST (0.1 GPH)
☐ 7. SELF MONITORING	1	ION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):
GRAVITY FLOW	7. SELF	MONITORING
9. BIENNIAL INTEGRITY TEST (0.1 GPH)		LOW (Check all that apply):
	-	Y VISUAL MONITORING
		NIAL INTEGRITY TEST (0.1 GPH)
SECONDARILY CONTAINED PIPING	SECONDA	RILY CONTAINED PIPING
PRESSURIZED PIPING (Check all that apply):	l.	ED PIPING (Check all that apply):
10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISU		TINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL RMS AND (Check one)
ALARMS AND (Check one) a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS	☐ a.	AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM	EM 🗆 b.	AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM
DISCONNECTION	Па	DISCONNECTION NO AUTO PUMP SHUT OFF
☐c. NO AUTO PUMP SHUT OFF ☐ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) <u>WITH</u> FLOW SHUT	•	
OFF OR RESTRICTION	L 111 110 11	OMATIC LEAK DETECTOR
☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)	☐ 12. ANN	UAL INTEGRITY TEST (0.1 GPH)
SUCTION/GRAVITY SYSTEM		GRAVITY SYSTEM
☑ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS	☐ 13. CON	TINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS
EMERGENCY GENERATORS ONLY (Check all that apply)	EMERGEN	CY GENERATORS ONLY (Check all that apply)
☑ 14. CONTINUOUS SUMP SENSOR <u>WITHOUT</u> AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS	14. CO	NTINUOUS SUMP SENSOR <u>WITHOUT</u> AUTO PUMP SHUT OFF DIBLE AND VISUAL ALARMS
□ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLO	D.111	TOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)
SHUT OFF OR RESTRICTION		NUAL INTEGRITY TEST (0.1 GPH)
☑ 16. ANNUAL INTEGRITY TEST (0.1 GPH)	Į.	ILY VISUAL CHECK
17. DAILY VISUAL CHECK		
	SER CONTAINI	
DISPENSER CONTAINMENT 468. 1. FLOAT MECHANISM THAT SHU DATE INSTALLED 2. CONTINUOUS DISPENSER PAN		_
ELS CONTINUOUS DISPENSER PA		
N/A DISPENSER + AUDIBLE AND V	SUAL ALARMS	
	PERATOR SIGN	VATURE
certify that the information provided herein is true and accurate to the best of	my knowledge.	TE 2 2 470.
SNATURE OF OWNER/OPERATOR	DATE:	128 200B TK-3-2 470.
NAME OF OWNER/OPERATOR (print): David McGraw	TITLE OF C	DWNER/OPERATOR: Associate Lab Director / COO 472.
NAME OF OWNER/OPERATOR (print): David McGraw	TILE OF C	
Permit Number (Agency use only) 473. Permit Approved By (Agency use only)	474. Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions (Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

- 458. PIPING SYSTEM TYPE (UNDERGROUND) -
- 459. PIPING SYSTEM TYPE (ABOVEGROUND) -
- For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.
- 460. PIPING CONSTRUCTION (UNDERGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.
- 461. PIPING MANUFACTURER (UNDERGROUND) Enter the name of the piping manufacturer.
- 462. PIPING CONSTRUCTION (ABOVEGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.
- 463. PIPING MANUFACTURER (ABOVEGROUND) Enter the name of the piping manufacturer.
- 464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 466. PIPING LEAK DETECTION (UNDERGROUND) -
- 467. PIPING LEAK DETECTION (ABOVEGROUND)-
- For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.
- 468. DATE DISPENSER CONTAINMENT INSTALLED If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."
- 469. DISPENSER CONTAINMENT TYPE Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.
 - SIGNATURE OF OWNER/OPERATOR The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.
- 470 DATE CERTIFIED Enter the date the form was signed.
- 471. OWNER/ OPERATOR NAME Print or type the name of the person signing the form.
- 472. OWNER/ OPERATOR TITLE Enter the title of the person signing the form.
- 473. PERMIT NUMBER This space is for agency use only.
- 474. PERMIT APPROVED BY This space is for agency use only.
- 475. PERMIT EXPIRATION DATE This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM TANKS

UNDERGROUND STORAGE TANKS - TANK PAGE 1

(Two pages per tank)

		tana da sa sa sa sa sa sa sa sa sa sa sa sa sa	1 1						Page	1 of 2
TYPE OF ACTION 1. NEW PERMIT [4. AMENDED PERMIT	5. CHANGE O	E INFORMATI	ION F] 6. TEN	√PΩRAR	V TAN	K CLO	SURE	430.
=	1 4. AMENDED PERMIT	_ J. CIMITOL O	n ku olduru	_	_				ON SITE	
(Check one item only) 3. RENEWAL PERMIT				_					0., 0	1
	pecify reason)	(Specify reason)		- L	_ 8. IA	NK KLUVI	7120		1 1	- 1.
BUSINESS NAME (Sume as FACILITY NAME or DBA - Doin	Business As) 3. FACII	ימו זווי:							1 1	:
Lawrence Berkeley National Laboratory						1			<u> </u>	
LOCATION WITHIN SITE (Optional)		4.4.1			-					431.
Building 2 - North Side		·							<u>.</u>	
		ESCRIPTIO								
(A scaled plot plan with the location			landmarks sha	ll be sub	omitted t	o the loc	al age	ncy.)		
TANK ID# 432. TANK M	ANUFACTURER	433	3. COMPAI	RTMEN	TALIZE	D TAN	K 📙	Yes ≥	⊴ No	434.
TK-4-2 Owens-	Corning		If "Yes," con			•				
DATE INSTALLED 435. TANK C	APACITY IN GALLONS	430	6. NUMBEI	R OF C	OMPAR	TMENT	ŗs .			437.
(YEAR/MO)			1,,,,							
1988/July 4,000		·	N/A							
ADDITIONAL DESCRIPTION (For local use only)						7	4			438.
										
	II. TANK	CONTENTS	i							
TANK USE 439. PETROLEUM T	YPE									440.
☐ 1. MOTOR VEHICLE FUEL ☐ 1a. REGULAR	UNLEADED ☐ 2. LE	EADED	☐ 5. JET FU	JEL.						
(If checked, complete Petroleum Type) 1b. PREMIUM			☐ 6. AVIAT	TON GA	S					
□ 2. NON-FUEL PETROLEUM □ 1c. MIDGRAD.		ASOHOL	☐ 99. OTHE	R:						
<u> </u>	E (from Hazardous Materials Inven		441. CAS#	(from Haz	ardous Ma	erials Inve	ntory pa	ge)		442.
☐ 4. HAZARDOUS WASTE Diesel #2	The firem standard and standard was		6847	6346						
(Includes Used Oil)			0017			V.,				
95. UNKNOWN	-					•			* -	-
	THE TEAMER OF	ONCTRICTI	ION							
		ONSTRUCTI		- 11/ A 1 T 3	11/17/LT TA	TEDNIAL	TOT AT	NUCD C	VCTEM	443
TYPE OF TANK	III. TANK CO	TTH EXTERIOR	☐ 5. SINGLE ☐ 95. UNKN	OWN	WITH IN	TERNAI	L BLAI	DDER S	YSTEM	443.
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UST - Tank Form Page 1 Instructions (Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to making changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tank form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 430. TYPE OF ACTION Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
- 431. LOCATION WITHIN SITE You may use this space to describe the location of the tank within the facility.
- 432. TANK ID NUMBER If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
- 433. TANK MANUFACTURER Enter the name of the company that manufactured the tank.
- 434. COMPARTMENTALIZED TANK Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
- 435. DATE TANK INSTALLED Enter the year and month the tank was installed.
- 436. TANK CAPACITY Enter the tank capacity in gallons.
- 437. NUMBER OF TANK COMPARTMENTS If the tank is compartmentalized, enter the number of compartments.
- 438. ADDITIONAL DESCRIPTION You may use this space to provide additional tank or location information.
- 439. TANK USE Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
- 440. PETROLEUM TYPE If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
- 441. COMMON NAME For substances other than motor vehicle fuels, enter the common name of the substance stored.
- 442. CAS # For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
- 443. TYPE OF TANK Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
- 444. TANK MATERIAL (PRIMARY TANK) Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
- 445. TANK MATERIAL (SECONDARY TANK) Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
- 446. TANK INTERIOR LINING OR COATING Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
- 447. DATE TANK INTERIOR LINING INSTALLED If applicable, enter the date the tank interior lining was installed.
- 448. OTHER TANK CORROSION PROTECTION If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
- 449. DATE TANK CORROSION PROTECTION INSTALLED If applicable, enter the date tank corrosion protection was installed.
- 450. YEAR SPILL AND OVERFILL INSTALLED Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
- 451. TYPE OF SPILL PROTECTION Enter the type of spill containment, drop tube, and striker plate installed.
- 452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
- 453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
- 454. TANK LEAK DETECTION (DOUBLE WALL TANKS) For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
- 455. ESTIMATED DATE LAST USED Complete this section only if the tank was closed in place. Enter the date the tank was last
- 456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
- 457. TANK FILLED WITH INERT MATERIAL Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM

TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

AT DEDOG CO	NUMBER	TONICE	Page 2 of 2
VI. PIPING COI UNDERGROUND PIPING	NSIRUCI.	TOIN (Check	ABOVEGROUND PIPING
	3. GRAVITY	7 458.	☐ 1. PRESSURE ☐ 2. SUCTION ☐ 3. GRAVITY 459.
	99. OTHER	460.	☐ 1. SINGLE WALL ☐ 95. UNKNOWN 462.
MANUFACTURER ☑ 2. DOUBLE WALL ☐ 95. UNKNOWN			☐ 2. DOUBLE WALL ☐ 99. OTHER
MANUFACTURER		461.	MANUFACTURER 463.
	☐ 1. BARE		☐ 6. FRP COMPATIBLE W/100% METHANOL
	☐ 2. STAIN		—
	☐ 3. PLAST	IIC COMPA	TIBLE W/CONTENTS ☐ 8. FLEXIBLE (HDPE) ☐ 99. OTHER
	4. FIBER	GLASS	☐ 9. CATHODIC PROTECTION
☐ 5. STEEL W/COATING ☐ 9. CATHODIC PROTECTION 464.	☐ 5. STEEL	. W/COATE	NG 🔲 95. UNKNOWN 465.
VII. PIPING LEAK DETECTION (Check all than	apply) (A descri	iption of the m	
UNDERGROUND PIPING	466. S	INCLE W	ABOVEGROUND PIPING ALL PIPING 467.
SINGLE WALL PIPING			ED PIPING (Check all that apply):
PRESSURIZED PIPING (Check all that apply): 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO			TRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP
SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNE		SHUT	OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION
+ AUDIBLE AND VISUAL ALARMS.			DIBLE AND VISUAL ALARMS. THLY 0.2 GPH TEST
2. MONTHLY 0.2 GPH TEST	-		JAL INTEGRITY TEST (0.1 GPH)
☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)			Y VISUAL CHECK
	-		ONAL SUCTION SYSTEMS (Check all that apply)
CONVENTIONAL SUCTION SYSTEMS DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL.			
INTEGRITY TEST (0.1 GPH)	-		Y VISUAL MONITORING OF PIPING AND PUMPING SYSTEM
SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):			NNIAL INTEGRITY TEST (0.1 GPH)
☐ 7. SELF MONITORING	S.	AFE SUCT	ION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):
GRAVITY FLOW		7. SELF	MONITORING
9. BIENNIAL INTEGRITY TEST (0.1 GPH)	G	GRAVITY F	LOW (Check all that apply):
1		□ 8. DAIL	Y VISUAL MONITORING
		□ 9. BIEN	NIAL INTEGRITY TEST (0.1 GPH)
SECONDARILY CONTAINED PIPING	S	SECONDA	RILY CONTAINED PIPING
PRESSURIZED PIPING (Check all that apply):			ED PIPING (Check all that apply):
10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND V ALARMS AND (Check one)	VISUAL 1		TINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL RMS AND (Check one)
a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS			AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND S	YSTEM	□ b.	AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM
DISCONNECTION		m _e	DISCONNECTION NO AUTO PUMP SHUT OFF
☐c. NO AUTO PUMP SHUT OFF ☐ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SI	нит -	_	
OFF OR RESTRICTION	-		DMATIC LEAK DETECTOR
☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)	-	_	UAL INTEGRITY TEST (0.1 GPH)
SUCTION/GRAVITY SYSTEM	ŀ		GRAVITY SYSTEM
☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS	1 -		TINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS
EMERGENCY GENERATORS ONLY (Check all that apply)			CY GENERATORS ONLY (Check all that apply) NTINUOUS SUMP SENSOR <u>WITHOUT</u> AUTO PUMP SHUT OFF
		AU.	DIBLE AND VISUAL ALARMS
☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT	FLOW	☐ 15. AU	TOMATIC LINE LEAK DETECTOR (3.0 GPH TEST)
SHUT OFF OR RESTRICTION 16. ANNUAL INTEGRITY TEST (0.1 GPH)		□ 16. AN	NUAL INTEGRITY TEST (0.1 GPH)
☐ 17. DAILY VISUAL CHECK	ļ	— .	ILY VISUAL CHECK
	PENSER C		
DISPENSER CONTAINMENT 468. 1. FLOAT MECHANISM THAT			
DATE INSTALLED			
☐ 3. CONTINUOUS DISPENSER	R PAN SEN	SOR WIT	
N/ADISPENSER + AUDIBLE AN DX. OWNEI			
certify that the information provided herein is true and accurate to the bes			KTOKE
SNATURE OF OWNER/OPERATOR			TK-4-2 470.
I I I No ()-w-		L	1.26.200
NAME OF OWNER/OPERATOR (print): Davide McGraw		TITLE OF C	OWNER/OPERATOR: Associate Lab Director / COO 472.
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	The / f = :	anna anti-A	474. Permit Expiration Date (Agency use only) 475.
Permit Number (Agency use only) 473. Permit Approved	ъу (Адепсу 1	use omy)	474. Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions (Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

- 458. PIPING SYSTEM TYPE (UNDERGROUND) -
- 459. PIPING SYSTEM TYPE (ABOVEGROUND) -
- For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.
- 460. PIPING CONSTRUCTION (UNDERGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.
- 461. PIPING MANUFACTURER (UNDERGROUND) Enter the name of the piping manufacturer.
- 462. PIPING CONSTRUCTION (ABOVEGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.
- 463. PIPING MANUFACTURER (ABOVEGROUND) Enter the name of the piping manufacturer.
- 464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 466. PIPING LEAK DETECTION (UNDERGROUND) -
- 467. PIPING LEAK DETECTION (ABOVEGROUND)-
- For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.
- 468. DATE DISPENSER CONTAINMENT INSTALLED If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."
- 469. DISPENSER CONTAINMENT TYPE Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.
 - SIGNATURE OF OWNER/OPERATOR The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.
- 470 DATE CERTIFIED Enter the date the form was signed.
- 471. OWNER/ OPERATOR NAME Print or type the name of the person signing the form.
- 472. OWNER/ OPERATOR TITLE Enter the title of the person signing the form.
- 473. PERMIT NUMBER This space is for agency use only.
- 474. PERMIT APPROVED BY This space is for agency use only.
- 475. PERMIT EXPIRATION DATE This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM TANKS

UNDERGROUND STORAGE TANKS - TANK PAGE 1

(Two pages per tank)

																Page	1 of 1
TYPE OF ACTION 1. NEW PE	RMIT		4. AMENDED	PERM	IIT 🔲 5. CHA	NGE OI	INFOR	МАТІС	ON [6.7	ŒΜ	PORA	RY TA	NK C	LOS	URE	430.
(Check one item only) 3. RENEW		_			_					-] 7. F	ERI	/ANE	NTLY	CLOS	ED (ON SITE	
			scify reason)		(Specify reaso	n)			Е] 8. 7	TAN	K RE	40VE)			
BUSINESS NAME (Same as FACILITY	NAME or D			3.	FACILITY ID:			1							-	1:	1.
Lawrence Berkeley National					*.				-					'		- 1	
LOCATION WITHIN SITE (Optional						·			<u> </u>								431.
Northeast corner of Building	90, bety	ween Bu	ilding 55 ar	ıd Bı	uilding 90											-	
	•				K DESCRIP	TION											·
(A scaled plot pla	ın with the	e location o	of the UST sys	tem i	ncluding building	s and la	ındmarl	s shall	l be sub	mitte	d to	the lo	cal ag	ency.)		
TANK ID#			NUFACTUR		=:	433.	CO	MPAR	TMEN	ΓALI	ZEI	TA	NK [] Yes	X	No	434.
TK-1-55							If "Y	es," com	plete one j	oege fo	renc	h comp	artment.				
DATE INSTALLED	435. T	TANK CA	PACITY IN C	ALL	ONS	436.	NU	MBER	OF CC	MP.	RT	MEN	TS				437.
(YEAR/MO)						· -	3.71										
1986		1,000					N/A	<u> </u>		_		-				-	420
ADDITIONAL DESCRIPTION (For	r local use onl	ly)															438.
		•								_		. :					
			1	L TA	NK CONTE	NTS		· ·									
TANK USE 439.	PETROL	EUM TYI	E		+ + +												440.
☐ 1. MOTOR VEHICLE FUEL	☐ Ia. RE	GULAR U	NLEADED		2. LEADED		☐ 5. J	ET FUE	EL.								
(If checked, complete Petroleum Type)	☐ lb. PR	REMIUM U	NLEADED	×	3. DIESEL		☐ 6. A	VIATI	ON GAS	1							
2. NON-FUEL PETROLEUM	☐ ic. Mi	IDGRADE !	UNLEADED		4. GASOHOL		☐ 99. C										
3. CHEMICAL PRODUCT	COMMO	ON NAME	(from Hazardous	Materia	ils inventory page)		41. C	CAS# (1	from Haza	rdous l	Mate	iels Inv	entory [nge)		1 10	442.
10 4. HAZARDOUS WASTE	Diesel #	#2		. Virte	** t .	1.3	. 6	68476	346							2 1 2	
→ 95. UNKNOWN				2.5	·				. 1	:			•			•	·
			III. T	AN	K CONSTRU	JCTI(NC							7			
TYPE OF TANK	i. SINGLE	WALL	☐ 3. SING	LE W	ALL WITH EXTER	IOR	5. SI	NGLE	WALL V	VITH	INT	ERNA	L BL	DDE	SY	STEM	443.
(Check one item only)	2. DOUBL	EWALL			IE LINER ALL IN A VAULT		95. t	INKNO)WN					.*			
	1. BARES				SS / PLASTIC		5. C				Ē	95. 1	JNKN	OWN			444.
(Check one item only)	2. STAINL	LESS STEE	_		D W/FIBERGLAS				/IPATIBI		Γ] 9 9. (OTHE	l:		· · · · ·	
TANK MATERIAL – secondary tank	T 1 12 A D 1	e ereei			ED PLASTIC (FRP ASS / PLASTIC) '	W G ERP	/100% I	METHA TIBLE W	NOL	% M	FTHA	NOI.	95.	IINI	CNOWN	445.
			_		AD W/FIBERGLA				ORROD					□ 99.			7131
(Circle one helifolity)		E12200 01.			CED PLASTIC (FF		10. CO			••							
TANK INTERIOR LINING 1. I	RUBBER LI	TATIETO.	5. CO! ☐ 3. EPOXY !			CC I INI	NG	T 05	UNKNO	nwn		·	446.	DAT	FIN	STALLE	447.
	ALKYD LIY				NING 6 UNL		NO		OTHER					15.11	1		
(Check one item only)	1 I E A C 277 TD	ED CATH	DIC 12	emer	RGLASS REINFOR	cers of	4 E-17-7-	По	5 TINTEN	30317	.1		448.	DAT	E IN	STALLEI	449.
	TECTION	CED CATH			ESSED CURRENT		.A311C		9. OTHE				a.	באנו	L 114	3 I ALLLL	, 445.
	RIFICIAL A		1 TATOTA I I TO	455	- I TUDE	٠٠٠ ا	Ovene	ימת ויו	отесті	ON E	C) I II	DIATEN	rr. V	EAD T	cer	ATTED	452.
SPILL AND OVERFILL (Check all that apply) I . SPILL CC	NTAINME		R INSTALLED	45(D. TYPE		overe ⊠ 1. Al									F VALVI	
2. DROP TU	BE	1986					☐ 2. B <i>A</i>	ALL FL	OAT _	[□ 4.	EXE	MPT				
	PLATE	1986	117 m	A NIE	LEAK DE	recr	ION		•								
								the lea		\							
IF SINGLE WALL TANK	(A	A descripti	on of the mon	ionng	g program shall b				ai agend WALL		K O	RTA	NK V	/ITH	BI.4	DDER	454.
(Check all that apply)							(Check o	one item	only)							200.1	
1. VISUAL (EXPOSED PORTION	ONLY)		☐ 5. MANUA	L TAI	NK GAUGING (M				(SINGLI								
☐ 2. AUTOMATIC TANK GAUGING	G (ATG)		☐ 6. VADOS	ZON	E	- 1			uous ir			IIAL I	MONI	ORIN	G		
☐ 3. CONTINUOUS ATG			☐ 7. GROUN	DWA1	TER		□ 3. M.	ANUAI	L MONI	TORI	NG						
4. STATISTICAL INVENTORY RI	CONCILL	ATION	☐ 8. TANK T	ESTIN	iG												
(SIR) + BIENNIAL TANK TEST			99. OTHE														
V. 7	ANK C	CLOSUI	RE INFOR	MA	TION / PER	MAN	ENT	CLO	SURI	IN	Pl	LAC	E				
ESTIMATED DATE LAST USED (YR		425			TTTY OF SUBSTA									INER1	M/	TERIAL	457.
					gallons					-				es 🗆			

UST - Tank Form Page 1 Instructions (Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to making changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tank. form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 430. TYPE OF ACTION Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
- 431. LOCATION WITHIN SITE You may use this space to describe the location of the tank within the facility.
- 432. TANK ID NUMBER If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
- 433. TANK MANUFACTURER Enter the name of the company that manufactured the tank.
- 434. COMPARTMENTALIZED TANK Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
- 435. DATE TANK INSTALLED Enter the year and month the tank was installed.
- 436. TANK CAPACITY Enter the tank capacity in gallons.
- 437. NUMBER OF TANK COMPARTMENTS If the tank is compartmentalized, enter the number of compartments.
- 438. ADDITIONAL DESCRIPTION You may use this space to provide additional tank or location information.
- 439. TANK USE Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
- 440. PETROLEUM TYPE If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
- 441. COMMON NAME For substances other than motor vehicle fuels, enter the common name of the substance stored.
- 442. CAS # For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
- 443. TYPE OF TANK Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
- 444. TANK MATERIAL (PRIMARY TANK) Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
- 445. TANK MATERIAL (SECONDARY TANK) Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
- 446. TANK INTERIOR LINING OR COATING Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
- 447. DATE TANK INTERIOR LINING INSTALLED If applicable, enter the date the tank interior lining was installed.
- 448. OTHER TANK CORROSION PROTECTION If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
- 449. DATE TANK CORROSION PROTECTION INSTALLED If applicable, enter the date tank corrosion protection was installed.
- 450. YEAR SPILL AND OVERFILL INSTALLED Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
- 451. TYPE OF SPILL PROTECTION Enter the type of spill containment, drop tube, and striker plate installed.
- 452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
- 453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
- 454. TANK LEAK DETECTION (DOUBLE WALL TANKS) For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
- 455. ESTIMATED DATE LAST USED Complete this section only if the tank was closed in place. Enter the date the tank was last used.
- 456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
- 457. TANK FILLED WITH INERT MATERIAL Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM

TANKS

<u>UNDERGROUND STORAGE TANKS – TANK PAGE 2</u>

					Pag	e 2 of 2
1000	VI. PIPING CO	ONSTRU	CTION (Check		CROTININ DIDING	
	ERGROUND PIPING	T CDAN	AEÜ.		GROUND PIPING	459.
SYSTEM TYPE 1. PRESSURE CONSTRUCTION/ 1 SINGLE WA] 3. GRAV		☐ 1. PRESSURE ☐ 2. SUC		459. 462.
MANUFACTURER		☐ 99. OTH	ER 460.	■ 1. SINGLE WALL	☐ 95. UNKNOWN ☐ 99. OTHER	404.
2. DOUBLE W.			461	2. DOUBLE WALL	☐ 99. UIREK	463.
MANUFACTURE		T	461.	MANUFACTURER Die H	DO COMPATIDI E MAIONE METE	
-	MPATIBLE W/100% METHANOL		RE STEEL		RP COMPATIBLE W/100% METH ALVANIZED STEEL	IANUL
☐ 2. STAINLESS STEEL ☐ 7. GALVA☐ 3. PLASTIC COMPATIBLE WITH CON	NIZED STEEL FIENTS □ 95. UNKNOWN		AINLESS STEE ASTIC COMPA	TIBLE W/ CONTENTS 8. F		OTHER
☐ 3. PLASTIC COMPATIBLE WITH	Ξ	l .	ASTIC COMPA SERGLASS	_	ATHODIC PROTECTION	
☐ 4. PIBERGLASS ☐ 6. PILEATS ☐ 5. STEEL W/COATING ☐ 9. CATHO		1	EEL W/COATE		UNKNOWN	465.
	LEAK DETECTION (Check all that			-		
	OUND PIPING			ABOVEGROU		
SINGLE WALL PIPING		466.		ALL PIPING		467.
PRESSURIZED PIPING (Check all that ap	· -			ED PIPING (Check all that apply)		
+ AUDIBLE AND VISUAL ALARI	FAILURE, AND SYSTEM DISCONN	D PUMP ECTION	SHUT + AUI	OFF FOR LEAK, SYSTEM FAIL DIBLE AND VISUAL ALARMS.	R 3.0 GPH TEST <u>WITH</u> AUTO PU LURE, AND SYSTEM DISCONNE	
☐ 2. MONTHLY 0.2 GPH TEST	•			THLY 0.2 GPH TEST	*4	
☐ 3. ANNUAL INTEGRITY TEST (0.1 0	SPH)			UAL INTEGRITY TEST (0.1 GPH)	
			—	Y VISUAL CHECK		
CONVENTIONAL SUCTION SYSTEMS 5. DAILY VISUAL MONITORING C INTEGRITY TEST (0.1 GPH)		L PIPING		ONAL SUCTION SYSTEMS (CH Y VISUAL MONITORING OF PE		
SAFE SUCTION SYSTEMS (NO VALVE	S IN BELOW GROUND PIPING):		☐ 6. TRIE	NNIAL INTEGRITY TEST (0.1 G	PH)	
☐ 7. SELF MONITORING	# # · # · - · · · · · · · · · · · · · ·	l		ION SYSTEMS (NO VALVES IN		
GRAVITY FLOW		I		MONITORING		
7 9. BIENNIAL INTEGRITY TEST (0.1	CDH)	l	_	LOW (Check all that apply):		
20 HH471747344 447 448/400000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	di II,	-		Y VISUAL MONITORING	*	
			1	NIAL INTEGRITY TEST (0.1 GP.	an.	
SECONDARILY CONTAINED PIP	TNTC			RILY CONTAINED PIPING		
PRESSURIZED PIPING (Check all that ap		-		ED PIPING (Check all that apply)	· ·	
	SENSOR WITH AUDIBLE AND	VISUAL	IO. CON		ENSOR WITH AUDIBLE AND	VISUAL
_	OR LEAKS, SYSTEM FAILURE AND	SYSTEM	□ ъ.		EAKS, SYSTEM FAILURE AND	SYSTEM
☐ 11. AUTOMATIC LINE LEAK DETE	CTOR (3.0 GPH TEST) WITH FLOW	SHUT	□ 11. AUT	OMATIC LEAK DETECTOR		
OFF OR RESTRICTION 12. ANNUAL INTEGRITY TEST (0.1	GPH)			UAL INTEGRITY TEST (0.1 GPF	1)	
SUCTION/GRAVITY SYSTEM			l	GRAVITY SYSTEM		
☐ 13. CONTINUOUS SUMP SENSOR +	AUDIBLE AND VISUAL ALARMS		1 -	TINUOUS SUMP SENSOR + AU		
EMERGENCY GENERATORS ONLY (I	TTHOUT AUTO PUMP SHUT OFF	1	☐ 14. CO	CY GENERATORS ONLY (Che NTINUOUS SUMP SENSOR <u>WIT</u> DIBLE AND VISUAL ALARMS		
☐ 15. AUTOMATIC LINE LEAK DET		IT FLOW		TOMATIC LINE LEAK DETECT	OR (3.0 GPH TEST)	
SHUT OFF OR RESTRICTION 16. ANNUAL INTEGRITY TEST (0.1	CDU			NUAL INTEGRITY TEST (0.1 GI		
☐ 17. DAILY VISUAL CHECK	Grn,		1 -	ILY VISUAL CHECK	· • • • • • • • • • • • • • • • • • • •	
II. DAIL! VIDORS CHISCR	VIII DI	CDENSEE	CONTAINI			
DISPENSER CONTAINMENT 468.	☐ 1. FLOAT MECHANISM THA				4. DAILY VISUAL CHECK	469.
DATE INSTALLED	2. CONTINUOUS DISPENSE				5. TRENCH/LINER MONITO	
	☐ 3. CONTINUOUS DISPENSE	ER PAN S	ENSOR WIT	H VILLO COLLE OFF FOR	☐ 6. NONE	
N/A	DISPENSER + AUDIBLE A	ND VISUA	L ALARMS			
			ATOR SIGN	ATURE		
certify that the information provided	herein is true and accurate to the be	est of my s			TTZ 1 5	<i>=</i> 470.
GNATURE OF OWNER/OPERATOR	<u> </u>		DATE:	2 · LB · ZOOE) DWNER/OPERATOR: ASSOCIA	TK-1-5	472.
NAME OF OWNER/OPERATOR (print):	David McGraw		TITLE OF C			
Permit Number (Agency use only)	473. Permit Approve	d By (Agen	icy use only)	474. Permit Expirati	ion Date (Agency use only)	475.

UST - Tank Form Page 2 Instructions (Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

- 458. PIPING SYSTEM TYPE (UNDERGROUND) -
- 459. PIPING SYSTEM TYPE (ABOVEGROUND) -
- For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.
- 460. PIPING CONSTRUCTION (UNDERGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.
- 461. PIPING MANUFACTURER (UNDERGROUND) Enter the name of the piping manufacturer.
- 462. PIPING CONSTRUCTION (ABOVEGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.
- 463. PIPING MANUFACTURER (ABOVEGROUND) Enter the name of the piping manufacturer.
- 464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 466. PIPING LEAK DETECTION (UNDERGROUND) -
- 467. PIPING LEAK DETECTION (ABOVEGROUND)-
- For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.
- 468. DATE DISPENSER CONTAINMENT INSTALLED If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."
- 469. DISPENSER CONTAINMENT TYPE Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.
 - SIGNATURE OF OWNER/OPERATOR The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.
- 470 DATE CERTIFIED Enter the date the form was signed.
- 471. OWNER/ OPERATOR NAME Print or type the name of the person signing the form.
- 472. OWNER/ OPERATOR TITLE Enter the title of the person signing the form.
- 473. PERMIT NUMBER This space is for agency use only.
- 474. PERMIT APPROVED BY This space is for agency use only.
- 475. PERMIT EXPIRATION DATE This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM TANKS

UNDERGROUND STORAGE TANKS - TANK PAGE 1

(Two pages per tank)

					٠]	Page 1	of 2
TYPE OF ACTION 1. NEW PER	MIT [4. AMENDED PE	RMIT 🔲 5. CH.	ANGE OF	INFORM	OITAN	N [1 6. T	EMI	ORAI	RY TA	NK CLO	DSURE	<u> </u>	430.
(Check one item only) 3. RENEWA					11,20,2							CLOSE			
(Check this help omy)		pecify reason)	(Specify rea	son)			_	8. T							
BUSINESS NAME (Same as FACILITY N			FACILITY ID:	T		1 ;	- T	_					.		1.
Lawrence Berkeley National I		Diamese Fish		-				1							
LOCATION WITHIN SITE (Optional)	<u> </u>				! .					.'					431.
Building 76 - South side by M	lotor Pool offic	ces			-										!
		1. TA	NK DESCRI	PTION	₹										
(A scaled plot plan	with the location					s shall	be sul	bmitte	d to 1	the lo	cal ag	ency.)			
TANK ID#		ANUFACTURER		433.	COM	IPAR'	TMEN	TALL	ZED	TAN	ik 🗀	Yes 2	× No		434.
TK-5-76	Modern	Welding			If "Ye	5," co mp	olete one	page for	r each	compa	nnent.		•		
DATE INSTALLED	435. TANK CA	PACITY IN GAL	LONS	436.	NUN	IBER	OF C	OMPA	RT?	MEN'	ΓS				437.
(YEAR/MO)	10.000				DT/A										
December/1990	10,000				N/A								·		438.
ADDITIONAL DESCRIPTION (For I	ocal use only)														4,36,
		* * * * * * * * * * * * * * * * * * *	CANTZ CONTO	יייייייי											
			CANK CONT	CIVID											
	PETROLEUM TY		<u> </u>											٠.	440.
I -	🛮 1a. REGULAR U		2. LEADED		□ 5. JE			_							
1	☐ 1b. PREMIUM U		3. DIESEL		☐ 6. A¹			S							
-	Ic. MIDGRADE		4. GASOHOL		99. O		rom Hez		data.	into torre		\			442.
!		E (from Hazardous Mai	erials Inventory page)					t snooth:	VIBICIT	inis inve	mury p	n <u>s</u> c)			
4. HAZARDOUS WASTE Gasoline 8006619															
95. UNKNOWN					1			* .		:	-				• :
1 38,0112,011		III TA	NK CONSTR	TICTL	ON	-									
THE OFTIANY	SINGLE WALL		WALL WITH EXTE		□ 5. SIN	era is v	WA11	WITH	INTI	EDNA.	T FRI A	אינונד	: SVSTE	м	443.
(Check one item only)	DOUBLE WALL	MEMBR	ANE LINER WALL IN A VAUL		☐ 95. UI ☐ 99. O	NKNO		******	11411	-14477		DDL.			
	BARE STEEL.		ASS / PLASTIC		5. CO		TE			95. L	NKNO	OWN			444.
(Check one item only) 2.	STAINLESS STEI		LAD W/FIBERGLA		□ 8. FR] 99. C	THER	<u>:</u>			
REINFORCED PLASTIC (FRP) W/100% METHANOL TANK MATERIAL – secondary tank															
Check one item only) 2. STAINLESS STEEL \(\times 4\) STEEL CLAD W/FIBERGLASS \(\times 9\). FRP NON-CORRODABLE JACKET \(\times 99\). OTHER \(\times 99\). OTHER															
REINFORCED PLASTIC (FRP) ☐ 10. COATED STEEL															
☐ 5. CONCRETE TANK INTERIOR LINING ☐ 1. RUBBER LINED ☐ 3. EPOXY LINING ☐ 5. GLASS LINING ☐ 95. UNKNOWN 446. DATE INSTALLED 447.															
OR COATING 2. AI	KYD LINING		LINING 🗵 6. UN			= 99.	OTHE	R	-		_	- '			
(Check one item only) OTHER CORROSION ☐ 1. MANUFACTURED CATHODIC ☒ 3. FIBERGLASS REINFORCED PLASTIC ☐ 95. UNKNOWN 448. DATE INSTALLED 449.															
PROTECTION PROTE	ECTION	☐ 4. IM	PRESSED CURREN	T			o. OTH				-				
SPILL AND OVERFILL			450. TYPE	451.	OVERFII	LL PRO	OTECT	ION E	QUIF	MEN	T: Y	EAR INS	STALL	ED	452.
(Check all that apply) I 1. SPILL CON	TAINMENT 1990											HUT O	FF VAI	VE 19	990
				<u>:</u> _	<u></u> 2, ВА.	الداع ماسد	UAI _	<u> </u>	_1 4.	اللمت	AT 1				
			K LEAK DE	TECT	ION	-									
,	(A descript	ion of the monitor	ing program shall									w			
IF SINGLE WALL TANK				453.	IF DOU			TAN	K O	R TA	NK W	/ITH B	LADD	ER	454.
(Check all that apply) 1. VISUAL (EXPOSED PORTION O	NLY)	☐ 5. MANUAL T	ANK GAUGING (N	ITG)	(Check or			E WA	LL I:	N VAI	лт о	NLY)			
☐ 2. AUTOMATIC TANK GAUGING (ATG) ☐ 6. VADOSE ZONE ☐ 2. CONTINUOUS INTERSTITIAL MONITORING															
☐ 3. CONTINUOUS ATG	-	☐ 7. GROUNDW			☐ 3. MA	ANUAI	L MON	ITORI	NG					•	
☐ 4. STATISTICAL INVENTORY REC	CONCILIATION	☐ 8. TANK TEST						+1							
(SIR) + BIENNIAL TANK TESTE		☐ 99. OTHER _													
· · ·		RE INFORM	ATION / PE	RMAN	ENT (CLO	SUR	EIN	рī	AC	<u>Е</u>				
,	155		ANTITY OF SUBST				456.					INERT :	MATE	71417	457.
ESTIMATED DATE LAST USED (YR/N	MOIDAT)	ESTIMATED QU	ANTITY OF SUBSI	ruvee R	PIATURATI,	14		11111		·		es 🔲 :			

UST - Tank Form Page 1 Instructions (Formerly SWRCB Permit Application Form B)

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- 431. LOCATION WITHIN SITE You may use this space to describe the location of the tank within the facility.
- 432. TANK ID NUMBER If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
- 433. TANK MANUFACTURER Enter the name of the company that manufactured the tank.
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- 435. DATE TANK INSTALLED Enter the year and month the tank was installed.
- 436. TANK CAPACITY Enter the tank capacity in gallons.
- 437. NUMBER OF TANK COMPARTMENTS If the tank is compartmentalized, enter the number of compartments.
- 438. ADDITIONAL DESCRIPTION You may use this space to provide additional tank or location information.
- 439. TANK USE Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
- 440. PETROLEUM TYPE If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
- 441. COMMON NAME For substances other than motor vehicle fuels, enter the common name of the substance stored.
- 442. CAS # For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
- 443. TYPE OF TANK Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
- 444. TANK MATERIAL (PRIMARY TANK) Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
- 445. TANK MATERIAL (SECONDARY TANK) Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
- 446. TANK INTERIOR LINING OR COATING Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
- 447. DATE TANK INTERIOR LINING INSTALLED If applicable, enter the date the tank interior lining was installed.
- 448. OTHER TANK CORROSION PROTECTION If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
- 449. DATE TANK CORROSION PROTECTION INSTALLED If applicable, enter the date tank corrosion protection was installed.
- 450. YEAR SPILL AND OVERFILL INSTALLED Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
- 451. TYPE OF SPILL PROTECTION Enter the type of spill containment, drop tube, and striker plate installed.
- 452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
- 453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
- 454. TANK LEAK DETECTION (DOUBLE WALL TANKS) For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
- 455. ESTIMATED DATE LAST USED Complete this section only if the tank was closed in place. Enter the date the tank was last used
- 456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
- 457. TANK FILLED WITH INERT MATERIAL Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM

TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

VI. PIPING CONSTRU	CTION (Check all that apply)					
UNDERGROUND PIPING	ABOVEGROUND PIPING					
SYSTEM TYPE 🛛 1. PRESSURE 🔲 2. SUCTION 🔲 3. GRAV	ITY 458.					
CONSTRUCTION/ MANUFACTURER □ 1. SINGLE WALL □ 3. LINED TRENCH □ 99. OTHER □ 2. DOUBLE WALL □ 95. UNKNOWN	ER 460. ☐ 1. SINGLE WALL ☐ 95. UNKNOWN 462. ☐ 2. DOUBLE WALL ☐ 99. OTHER					
MANUFACTURER Ameron Dualoy	461. MANUFACTURER 463.					
······································	RE STEEL G. FRP COMPATIBLE W/100% METHANOL					
	AINLESS STEEL 7. GALVANIZED STEEL					
	ASTIC COMPATIBLE W/ CONTENTS					
- 1	ERGLASS □ 9. CATHODIC PROTECTION					
	BEL W/COATING 95. UNKNOWN 465.					
VII. PIPING LEAK DETECTION (Check all that apply) (A de	escription of the monitoring program shall be submitted to the local agency.) ABOVEGROUND PIPING					
UNDERGROUND PIPING SINGLE WALL PIPING 466.	SINGLE WALL PIPING 467.					
PRESSURIZED PIPING (Check all that apply):	PRESSURIZED PIPING (Check all that apply):					
☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST <u>WITH</u> AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.	☐ 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST <u>WITH</u> AUTO PUMP SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.					
☐ 2. MONTHLY 0.2 GPH TEST	☐ 2. MONTHLY 0.2 GPH TEST					
☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)	☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)					
	☐ 4. DAILY VISUAL CHECK					
CONVENTIONAL SUCTION SYSTEMS	CONVENTIONAL SUCTION SYSTEMS (Check all that apply)					
☐ 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH)	☐ 5. DAILY VISUAL MONITORING OF PIPING AND PUMPING SYSTEM					
SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):	☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)					
☐ 7. SELF MONITORING	SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):					
GRAVITY FLOW	☐ 7. SELF MONITORING					
9. BIENNIAL INTEGRITY TEST (0.1 GPH)	GRAVITY FLOW (Check all that apply):					
en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co	☐ 8. DAILY VISUAL MONITORING					
	9. BIENNIAL INTEGRITY TEST (0.1 GPH)					
SECONDARILY CONTAINED PIPING	SECONDARILY CONTAINED PIPING					
PRESSURIZED PIPING (Check all that apply):	PRESSURIZED PIPING (Check all that apply):					
 CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one) 	10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one)					
☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION	☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS ☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION					
⊠c. NO AUTO PUMP SHUT OFF	☐c. NO AUTO PUMP SHUT OFF					
☑ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION	☐ 11. AUTOMATIC LEAK DETECTOR					
☑ 12. ANNUAL INTEGRITY TEST (0.1 GPH)	☐ 12. ANNUAL INTEGRITY TEST (0.1 GPH)					
SUCTION/GRAVITY SYSTEM	SUCTION/GRAVITY SYSTEM					
☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS	☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS					
EMERGENCY GENERATORS ONLY (Check all that apply) 14. CONTINUOUS SUMP SENSOR <u>WITHOUT</u> AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS	EMERGENCY GENERATORS ONLY (Check all that apply) 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS					
15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF OR RESTRICTION	☐ 15. AUTOMATIC LINE LEAK DETECTOR (5.0 GPH TEST)					
□ 16. ANNUAL INTEGRITY TEST (0.1 GPH)	☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)					
☐ 17. DAILY VISUAL CHECK	☐ 17. DAILY VISUAL CHECK					
VIII. DISPENSER	CONTAINMENT					
DISPENSER CONTAINMENT 468. 1. FLOAT MECHANISM THAT SHUTS (OFF SHEAR VALVE 469.					
DATE INSTALLED 2. CONTINUOUS DISPENSER PAN SENSOR + AUDIBLE AND VISUAL ALARMS 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS 1990 (containment) 3. CONTINUOUS DISPENSER PAN SENSOR WITH AUTO SHUT OFF FOR DISPENSER + AUDIBLE AND VISUAL ALARMS 10 6. NONE						
Dial Evident Frounds I vision	ATOR SIGNATURE					
certify that the information provided herein is true and accurate to the best of my l						
JNATURE OF OWNER/OPERATOR	TK 5 76 470.					
NAME OF OWNER/OPERATOR (print): David McGraw	TITLE OF OWNER/OPERATOR: Associate Lab Director / COO					
V.	cy use only) 474. Permit Expiration Date (Agency use only) 475.					
Permit Number (Agency use only) 473. Permit Approved By (Agen	Cy use omy					

UST - Tank Form Page 2 Instructions (Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

- 458. PIPING SYSTEM TYPE (UNDERGROUND) -
- 459. PIPING SYSTEM TYPE (ABOVEGROUND) -
- For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.
- 460. PIPING CONSTRUCTION (UNDERGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.
- 461. PIPING MANUFACTURER (UNDERGROUND) Enter the name of the piping manufacturer.
- 462. PIPING CONSTRUCTION (ABOVEGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.
- 463. PIPING MANUFACTURER (ABOVEGROUND) Enter the name of the piping manufacturer.
- 464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 466. PIPING LEAK DETECTION (UNDERGROUND) -
- 467. PIPING LEAK DETECTION (ABOVEGROUND)-
- For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.
- 468. DATE DISPENSER CONTAINMENT INSTALLED If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."
- 469. DISPENSER CONTAINMENT TYPE Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.
 - SIGNATURE OF OWNER/OPERATOR The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.
- 470 DATE CERTIFIED Enter the date the form was signed.
- 471. OWNER/ OPERATOR NAME Print or type the name of the person signing the form.
- 472. OWNER/ OPERATOR TITLE Enter the title of the person signing the form.
- 473. PERMIT NUMBER This space is for agency use only.
- 474. PERMIT APPROVED BY This space is for agency use only.
- 475. PERMIT EXPIRATION DATE This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM TANKS

UNDERGROUND STORAGE TANKS - TANK PAGE 1

(Two pages per tank)

														•		Pa	ge 1	of 2
TYPE OF ACTION 1. NEW PERMIT		4. AMENDEI) PET	MIT 5. CH	ANGE O	F INFO	ORM	ATIO:	· □	6. TEN	/IPO	RAF	Y TA	NK	CLOS	URE		430.
(Check one item only) 3. RENEWAL PERM		4.144	- 1		_,				_							ON SIT	Œ	1
(Check the helitomy) S. Mantew Ale Field		anifu canron		(Specify rea	com)		:			8. TAI								
BUSINESS NAME (Same as FACILITY NAME of		ecify reason)	3.	FACILITY ID:	,UL)	Т			-	T	1		1	_		\Box		1.
	_	Business Asj	۵.	111012111111		-		1										- 1
Lawrence Berkeley National Labor LOCATION WITHIN SITE (Optional)	atory				<u>. </u>	<u> </u>						- 1						431.
I	n1-##-						in Historia				,		:		•			
Building 76 - South side by Motor	P001 01110		TT.A	NK DESCRI	יידינ	.7												
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(A scaled plot plan with t	TANK MA	ANUFACTUI	YSTER	incinant param	gs anu 1 433	. C	'OM'	PART	MENTA	ALIZE	D T	'AN	K F	l Y	y.) es 🛭	No		434.
IAMED#			LLIN						lete one pag									
TK-6-76 DATE INSTALLED 435.		Welding PACITY IN	GAI	LONS	430				OF COM								_	
(YEAR/MO)	imin ca	uncili ii	O/ 12	10110		''	,		0. 00.				-					437.
December/1990	10,000					N	N/A							:	•			
ADDITIONAL DESCRIPTION (For local use	only)																	438.
												•						
			n. 7	TANK CONT	ENTS		:											
TANK USE 439. PETRO	DLEUM TY	PE								·								440.
☑ 1. MOTOR VEHICLE FUEL [7] 15. 1	REGULAR U	INLEADED		☐ 2. LEADED		5.	. JET	FUEI	Ĺ	1944								
l	PREMIUM U			☐ 3. DIESEL		6.	. AV	TATIC	N GAS									
l _		UNLEADED		☐ 4. GASOHOL		 99	9. OT	THER:										
·			us Mat	erials Inventory page)		441.			om Hazard	ous Ma	erials	lave	ntory	page)	}			442.
☐ 4. HAZARDOUS WASTE Diese		- (22-11-11-11-11-11-11-11-11-11-11-11-11-1					68	4763	346									
(Includes Used Oil)																		
, 95. UNKNOWN																		
		III.	TA	NK CONSTR	UCTI	ON												
TYPE OF TANK 1. SING	LE WALL	☐ 3. SIN	GLE	WALL WITH EXTE	RIOR				ALL WI	TH IN	TER	NAI	BL	ADD	ER SY	STEM		.د44
(Check one item only)	DIE WATT			ANE LINER WALL IN A VAUL	r :	☐ 95. ☐ 99.		KNOV	WN									
TANK MATERIAL - primary tank 1. BARE				ASS / PLASTIC				CRE	Œ		□ 9	5. U	NKN	owi	N			444.
(Check one item only) 2. STAI	NLESS STEE			LAD W/FIBERGLA					PATIBLE		□ 9	9. C	THE	R:		_	_	
TANK MATERIAL – secondary tank 1. BA	ne eree			CED PLASTIC (FR GLASS / PLASTIC	P)	८ म्य	W/I	00% N	BLE W/	OL IODS: 1	TEIN	HAN	JO1.	П	S IIN	KNOW	N	445.
				CLAD W/FIBERGL											9. OT		•	
(Check the helifold)		RI	EINFO	RCED PLASTIC (F														
TANK INTERIOR LINING 1. RUBBER	LINED				ASSIIN	ING		1 95.3	UNKNOV	VN		-	146.	D/	TER	ISTALI	LED	447.
OR COATING 2. ALKYD				LINING 🖾 6. UN					OTHER_				_					
(Check one item only) OTHER CORROSION	ווספה באדני	ionic M	; FID	ERGLASS REINFO	BCED E	LAST	īC	05	LINKNO	ww			148.	ם ו	ATE P	STAL	LED	449.
PROTECTION PROTECTION	N			RESSED CURREN		1		□ 99	OTHER				_					
(If Applicable) 2. SACRIFICIAL SPILL AND OVERFILL		R INSTALLE	<u> </u>	450. TYPE	451.	OVE	RFII	I. PRO	TECTIO	N EOI	прм	EN	r: v	EAF	INST	ALLE)	452.
(Check all that apply) 1. SPILL CONTAIN			,	450.	731.	X 1.	ALA	RM	1990) 🗵 3	. FIL	LΤ	UBE.			VALV		
	1990)				☐ 2.	BAI.	L FLC	DAT	_ 🗆	4. E)	ŒM	PT					
M 3. STRIKER PLATE	1336		TA N	VK LEAK DE	TECT	TON	J											
	(A descript			ing program shall				e Joea	Lagency	.)								
IF SINGLE WALL TANK	(r desert ht	.ca or mo mo		Program dimin	453.				VALL T		OR	TA	NK V	VIT.	H BL	ADDE	R	454.
(Check all that apply)								e item		177 4 7 7	Th! I	7 . 7		1877 T	'n			
1. VISUAL (EXPOSED PORTION ONLY)		. = .		ANK GAUGING (N	11(3)	_			SINGLE									
2. AUTOMATIC TANK GAUGING (ATG)		6. VADO							OUS IN			IV.	1V.NI	ı UK	7740		:	
3. CONTINUOUS ATG		7. GROU				□ 3.	MA	NUAL	MONIT	TKTIN (,							
4. STATISTICAL INVENTORY RECONCI	LIATION	□ 8. TANK																
(SIR) + BIENNIAL TANK TESTING		☐ 99. OTH																
V. TANK	CLOSU	RE INFO	RM	ATION / PE	RMAI	VEN'	T C	LOS	SURE	IN F	'LA	(C)	E					
ESTIMATED DATE LAST USED (YR/MO/DA	(Y) 455.	ESTIMATE	QU.	ANTITY OF SUBST	ANCE F	EMAI	ININ	G ⁴	56. T	ANK F	ILLI	D V				ATERL	AL?	457.
				galions									□ :	'es	□ N	0		

UST - Tank Form Page 1 Instructions (Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to making changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tank form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 430. TYPE OF ACTION Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
- 431. LOCATION WITHIN SITE You may use this space to describe the location of the tank within the facility.
- 432. TANK ID NUMBER If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
- 433. TANK MANUFACTURER Enter the name of the company that manufactured the tank.
- 434. COMPARTMENTALIZED TANK Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
- 435. DATE TANK INSTALLED Enter the year and month the tank was installed.
- 436. TANK CAPACITY Enter the tank capacity in gallons.
- 437. NUMBER OF TANK COMPARTMENTS If the tank is compartmentalized, enter the number of compartments.
- 438. ADDITIONAL DESCRIPTION You may use this space to provide additional tank or location information.
- 439. TANK USE Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
- 440. PETROLEUM TYPE If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
- 441. COMMON NAME For substances other than motor vehicle fuels, enter the common name of the substance stored.
- 442. CAS # For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
- 443. TYPE OF TANK Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
- 444. TANK MATERIAL (PRIMARY TANK) Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
- 445. TANK MATERIAL (SECONDARY TANK) Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
- 446. TANK INTERIOR LINING OR COATING Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
- 447. DATE TANK INTERIOR LINING INSTALLED If applicable, enter the date the tank interior lining was installed.
- 448. OTHER TANK CORROSION PROTECTION If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
- 449. DATE TANK CORROSION PROTECTION INSTALLED If applicable, enter the date tank corrosion protection was installed.
- 450. YEAR SPILL AND OVERFILL INSTALLED Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
- 451. TYPE OF SPILL PROTECTION Enter the type of spill containment, drop tube, and striker plate installed.
- 452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
- 453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
- 454. TANK LEAK DETECTION (DOUBLE WALL TANKS) For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
- 455. ESTIMATED DATE LAST USED Complete this section only if the tank was closed in place. Enter the date the tank was last used.
- 456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
- 457. TANK FILLED WITH INERT MATERIAL Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM

TANKS

UNDERGROUND STORAGE TANKS – TANK PAGE 2

AT DEDUCE CONST	Page 2 of 2
UNDERGROUND PIPING CONS	TRUCTION (Check all that apply) ABOVEGROUND PIPING
	RAVITY 458. ☐ 1. PRESSURE ☐ 2. SUCTION ☐ 3. GRAVITY 459.
MANUFACTURER	OTHER 460. ☐ 1. SINGLE WALL. ☐ 95. UNKNOWN 462. ☐ 2. DOUBLE WALL. ☐ 99. OTHER
□ 2. DOUBLE WALL 95. UNKNOWN	
MANUFACTURER Ameron Dualoy	White the territory and the te
	I. BARE STEEL 6. FRP COMPATIBLE W/100% METHANOL
	2. STAINLESS STEEL 7. GALVANIZED STEEL
	3. PLASTIC COMPATIBLE W/ CONTENTS 8. FLEXIBLE (HDPE) 99. OTHER
	4. FIBERGLASS
	5. STEEL W/COATING 95. UNKNOWN 465.
VII. PIPING LEAK DETECTION (Check all that apply UNDERGROUND PIPING	(A description of the monitoring program shall be submitted to the local agency.) ABOVEGROUND PIPING
	466. SINGLE WALL PIPING 467.
PRESSURIZED PIPING (Check all that apply):	PRESSURIZED PIPING (Check all that apply):
1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PU	MP 1. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP
SHUT-OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTI	ON SHUT OFF FOR LEAK, SYSTEM FAILURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS.
+ AUDIBLE AND VISUAL ALARMS. D 2. MONTHLY 0.2 GPH TEST	2. MONTHLY 0.2 GPH TEST
	☐ 3. ANNUAL INTEGRITY TEST (0.1 GPH)
3. ANNUAL INTEGRITY TEST (0.1 GPH)	4. DAILY VISUAL CHECK
	_
CONVENTIONAL SUCTION SYSTEMS	CONVENTIONAL SUCTION SYSTEMS (Check all that apply)
DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPI INTEGRITY TEST (0.1 GPH)	5. DAILY VISUAL MONITORING OF PIPING AND FUMPING SYSTEM
SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):	☐ 6. TRIENNIAL INTEGRITY TEST (0.1 GPH)
☐ 7. SELF MONITORING	SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING):
GRAVITY FLOW	☐ 7. SELF MONITORING
9. BIENNIAL INTEGRITY TEST (0.1 GPH)	GRAVITY FLOW (Check all that apply):
y. District the second of the	□ 8. DAILY VISUAL MONITORING
SECONDARILY CONTAINED PIPING	SECONDARILY CONTAINED PIPING
	PRESSURIZED PIPING (Check all that apply):
PRESSURIZED PIPING (Check all that apply): 10. CONTINUOUS TURBINE SUMP SENSOR WITH AUDIBLE AND VISU	
ALARMS AND (Check one)	ALARMS AND (Check one)
☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS	☐ a. AUTO PUMP SHUT OFF WHEN A LEAK OCCURS
☐ b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYST	EM b. AUTO PUMP SHUT OFF FOR LEAKS, SYSTEM FAILURE AND SYSTEM DISCONNECTION
DISCONNECTION □ NO AUTO PUMP SHUT OFF	□c. NO AUTO PUMP SHUT OFF
☐ 11. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT	
OFF OR RESTRICTION	☐ 11. AUTOMATIC LEAK DETECTOR
☑ 12. ANNUAL INTEGRITY TEST (0.1 GPH)	12. ANNUAL INTEGRITY TEST (0.1 GPH)
SUCTION/GRAVITY SYSTEM	SUCTION/GRAVITY SYSTEM
☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS	☐ 13. CONTINUOUS SUMP SENSOR + AUDIBLE AND VISUAL ALARMS
EMERGENCY GENERATORS ONLY (Check all that apply)	EMERGENCY GENERATORS ONLY (Check all that apply)
☐ 14. CONTINUOUS SUMP SENSOR <u>WITHOUT</u> AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS	☐ 14. CONTINUOUS SUMP SENSOR <u>WITHOUT</u> AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS
☐ 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FL	
SHUT OFF OR RESTRICTION	
☐ 16. ANNUAL INTEGRITY TEST (0.1 GPH)	16. ANNUAL INTEGRITY TEST (0.1 GPH)
☐ 17. DAILY VISUAL CHECK	☐ 17. DAILY VISUAL CHECK
VIII. DISPEN	SER CONTAINMENT
DISPENSER CONTAINMENT 468. 1. FLOAT MECHANISM THAT SH	
-	SENSOR + AUDIBLE AND VISUAL ALARMS 5. TRENCH/LINER MONITORING
1990 (containment) \[\begin{align*} \begin{align*} SONTINUOUS DISPENSER PARTICLE AND V DISPENSER + AUDIBLE AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE + AUDIBLE	AN SENSOR <u>WITH</u> AUTO SHUT OFF FOR 6. NONE
.,	PERATOR SIGNATURE
rertify that the information provided herein is true and accurate to the best of	my knowledge.
JNATURE OF OWNER/OPERATOR	TK-6-76 470.
D L M (1 · a -	229.2009
NAME OF OWNER/OPERATOR (print): David McGraw	TITLE OF OWNER/OPERATOR: Associate Lab Director / COO 472.
<u> </u>	and the first of t
Permit Number (Agency use only) 473. Permit Approved By ((Agency use only) 474. Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions (Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

- 458. PIPING SYSTEM TYPE (UNDERGROUND) -
- 459. PIPING SYSTEM TYPE (ABOVEGROUND) -
- For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.
- 460. PIPING CONSTRUCTION (UNDERGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.
- 461. PIPING MANUFACTURER (UNDERGROUND) Enter the name of the piping manufacturer.
- 462. PIPING CONSTRUCTION (ABOVEGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.
- 463. PIPING MANUFACTURER (ABOVEGROUND) Enter the name of the piping manufacturer.
- 464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 466. PIPING LEAK DETECTION (UNDERGROUND) -
- 467. PIPING LEAK DETECTION (ABOVEGROUND)-
- For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.
- 468. DATE DISPENSER CONTAINMENT INSTALLED If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."
- 469. DISPENSER CONTAINMENT TYPE Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.
 - SIGNATURE OF OWNER/OPERATOR The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.
- 470 DATE CERTIFIED Enter the date the form was signed.
- 471. OWNER/ OPERATOR NAME Print or type the name of the person signing the form.
- 472. OWNER/ OPERATOR TITLE Enter the title of the person signing the form.
- 473. PERMIT NUMBER This space is for agency use only.
- 474. PERMIT APPROVED BY This space is for agency use only.
- 475. PERMIT EXPIRATION DATE This space is for agency use only.

UNIFIED PROGRAM CONSOLIDATED FORM TANKS

UNDERGROUND STORAGE TANKS - TANK PAGE 1

(Two pages per tank)

		.	•			Page 1	of 2
TYPE OF ACTION	ERMIT	4. AMENDED PI	ERMIT 5. CHANGE	OF INFORMATION	6. TEMPORARY TA	ANK CLOSURE	430.
	VAL PERMIT				☐ 7. PERMANENTLY	CLOSED ON SITE	1
(——————————————————————————————————————	,	(Specify reason)	(Specify reason)	•••	☐ 8. TANK REMOVE	D .	
BUSINESS NAME (Same as FACILIT	Y NAME or DBA - Doi:	ng Business As) 3.	FACILITY ID:				1.
Lawrence Berkeley Nationa		+ .	gramma and the				
LOCATION WITHIN SITE (Option				<u> </u>	The state of the state of	* * * * * * * * * * * * * * * * * * *	431.
Building 85 - East side			<u> Parting and the second secon</u>				
			ANK DESCRIPTIO		1.		
(A scaled plot p			em including buildings and	landmarks shall be s	abmined to the local a	gency.)	
TANK ID#	**	MANUFACTURE	R 4	l l	NTALIZED TANK		434.
TK-1-85		Containment	110015		ne page for each compartment	· · · · · · · · · · · · · · · · · · ·	
DATE INSTALLED	435. TANK (CAPACITY IN GA	ALLONS *	IN NUMBER OF	COMPARTMENTS		437.
(YEAR/MO) 1995/August	2,500	•		N/A		<u> </u>	
ADDITIONAL DESCRIPTION (F			the state of the state of				438.
		4.5			in the second		
		II.	TANK CONTENT	S	100	e for a second part of	
TANK USE 439.	PETROLEUM T	TYPE	100				440.
☐ 1. MOTOR VEHICLE FUEL	☐ 1a. REGULAF	RUNLEADED	☐ 2. LEADED	5. JET FUEL			
(If checked, complete Petroleum Type)	☐ 1b. PREMIUM		☑ 3. DIESEL	☐ 6. AVIATION G	AS		
2. NON-FUEL PETROLEUM	☐ 1c. MIDGRAI	DE UNLEADED	☐ 4. GASOHOL	☐ 99. OTHER:			
☐ 3. CHEMICAL PRODUCT	COMMON NAI	ME (from Hazardous M	(Asterials Inventory page)	441. CAS# (from H	azardous Moterials Inventory	page)	442.
4. HAZARDOUS WASTE	Diesel #2	-		68476346			
(includes Used Oil)							
J 95. UNKNOWN		:	·				
III. TANK CONSTRUCTION TYPE OF TANK □ 1. SINGLE WALL. □ 3. SINGLE WALL WITH EXTERIOR □ 5. SINGLE WALL WITH INTERNAL BLADDER SYSTEM 443.							
	1. SINGLE WALL		E WALL WITH EXTERIOR RANE LINER	☐ 5. SINGLE WALT	L WITH INTERNAL BL	ADDER SYSTEM	443.
	2. DOUBLE WAL	L 4. SINGL	E WALL IN A VAULT	☐ 99. OTHER		iovat .	444.
	1. BARE STEEL	_	GLASS / PLASTIC	☐ 5. CONCRETE ☐ 8. FRP COMPAT	☐ 95. UNKN IBLE ☐ 99. OTHE		444.
(Check one item only)	2. STAINLESS ST		CLAD W/FIBERGLASS ORCED PLASTIC (FRP)	W/100% METI	IANOL	·	
TANK MATERIAL – secondary tank 1. BARE STEEL 3. FIBERGLASS / PLASTIC 8. FRP COMPTIBLE W/100% METHANOL 95. UNKNOWN 445.							
(Check one item pnly) \qquad \qquad 2. STAINLESS STEEL \qquad 4. STEEL CLAD W/FIBERGLASS \qquad 9. FRP NON-CORRODABLE JACKET \qquad \qquad 99. OTHER \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq							
REINFORCED PLASTIC (FRP) 10. COATED STEEL 5. CONCRETE							
OR COATING 2	RUBBER LINED ALKYD LINING	☐ 3. EPOXY LI☐ 4. PHENOLI	INING ☐ 5. GLASS LI C LINING ☑ 6. UNLINED	NING ☐ 95. UNK ☐ 99. OTH		DATE INSTALLED	447.
	NUFACTURED CA	THODIC 3. F	TBERGLASS REINFORCED MPRESSED CURRENT	PLASTIC 95. UN 99. OT		DATE INSTALLED	449.
(If Applicable) 2. SA	CRIFICIAL ANODE	EAR INSTALLED	450. TYPE 451.	OVEREIL PROTEC	TION EQUIPMENT:	l ÆAR INSTALLED	452.
SPILL AND OVERFILL (Check all that apply) ☑ 1. SPILL C	CONTAINMENT 19		430.	⊠ 1. ALARM	1995 🛛 3. FILL TUBE	SHUT OFF VALVE 19	995
 ■ 2. DROP 1 ■ 3. STRIKE 	UBE 19	995 995		1 2. BALL FLOAT		1.00	
<u>⊠</u> 3.31RIKI			NK LEAK DETEC	TION			
	(A descr		oring program shall be sub	mitted to the local ag	ency.)		
IF SINGLE WALL TANK			453.	IF DOUBLE WAL	L TANK OR TANK '	WITH BLADDER	454.
(Check all that apply) 1. VISUAL (EXPOSED PORTIO	(אַ זאַט אַ	□ 5. MANUAL	TANK GAUGING (MTG)	(Check one item only) GLE WALL IN VAULT (ONLY)	
☐ 1. VISUAL (EXPOSED FORTION 2. AUTOMATIC TANK GAUGII		☐ 6. VADOSE	*	1 —	S INTERSTITIAL MON		
3. CONTINUOUS ATG	(/	7. GROUND		3. MANUAL MC	NITORING		
4. STATISTICAL INVENTORY	RECONCILIATION	_				•	
(SIR) + BIENNIAL TANK TE		99. OTHER		* + +*			
		URE INFOR	MATION / PERMA	NENT CLOSU	RE IN PLACE		
ESTIMATED DATE LAST USED ()	***		QUANTITY OF SUBSTANCE		,	INERT MATERIAL?	457.
ESTEMATED DATE LAST USED ()	MMOIDAT)		gallons	· · · · · · · · · · · · · · · · · · ·		Yes 🗆 No	

UST - Tank Form Page 1 Instructions (Formerly SWRCB Permit Application Form B)

Complete a separate form for each tank for all new permits, permit changes, or any facility information changes. This form must be submitted within 30 days of permit or facility information changes, unless your local agency requires approval prior to making changes. For compartmentalized tanks, each compartment is considered a separate tank and requires completion of a separate tank form. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 430. TYPE OF ACTION Check the reason why this form is being submitted. For amended permits and changes of information, include a brief statement summarizing the amendment or change.
- 431. LOCATION WITHIN SITE You may use this space to describe the location of the tank within the facility.
- 432. TANK ID NUMBER If the UST owner has assigned an in-house tank ID number to this tank, enter that number in this space.
- 433. TANK MANUFACTURER Enter the name of the company that manufactured the tank.
- 434. COMPARTMENTALIZED TANK Check the appropriate box to indicate whether or not the tank is compartmentalized. Each compartment is considered a separate tank.
- 435. DATE TANK INSTALLED Enter the year and month the tank was installed.
- 436. TANK CAPACITY Enter the tank capacity in gallons.
- 437. NUMBER OF TANK COMPARTMENTS If the tank is compartmentalized, enter the number of compartments.
- 438. ADDITIONAL DESCRIPTION You may use this space to provide additional tank or location information.
- 439. TANK USE Check the substance stored. If motor vehicle fuel, check box 1 and complete item 440, PETROLEUM TYPE.
- 440. PETROLEUM TYPE If box 1 in item 439 is checked, indicate the specific type/grade of fuel stored.
- 441. COMMON NAME For substances other than motor vehicle fuels, enter the common name of the substance stored.
- 442. CAS # For substances other than motor vehicle fuels, enter the CAS (Chemical Abstract Service) number.
- 443. TYPE OF TANK Check the type of tank construction. If type of tank is not listed, check "other" and specify type in the space provided.
- 444. TANK MATERIAL (PRIMARY TANK) Check the material of construction of the inner tank (i.e. inner tank wall nearest the hazardous substance stored). If the tank is lined, describe the lining material in item 446, not in this section. If the tank material is not listed, check "other" and specify the material in the space provided.
- 445. TANK MATERIAL (SECONDARY TANK) Check material of construction of the tank that provides containment external t and separate from, the primary containment described above. If the tank material is not listed, check "other" and specify the material in the space provided. If the tank is a single-wall tank, skip item 445.
- 446. TANK INTERIOR LINING OR COATING Check the material of construction of any interior lining or coating in the tank. If unlined, check "unlined." If the type of interior lining or coating is not listed, check "other" and specify the lining material in the space provided.
- 447. DATE TANK INTERIOR LINING INSTALLED If applicable, enter the date the tank interior lining was installed.
- 448. OTHER TANK CORROSION PROTECTION If any other tank corrosion protection methods are used, check the appropriate boxes to describe them. If methods used are not listed, check "other" and describe in the space provided.
- 449. DATE TANK CORROSION PROTECTION INSTALLED If applicable, enter the date tank corrosion protection was installed.
- 450. YEAR SPILL AND OVERFILL INSTALLED Check the appropriate boxes to indicate whether drop tube(s), spill containment, and striker plate(s) are installed. In the spaces provided, specify the year each type of equipment was installed.
- 451. TYPE OF SPILL PROTECTION Enter the type of spill containment, drop tube, and striker plate installed.
- 452. YEAR OVERFILL PROTECTION EQUIPMENT INSTALLED Check the appropriate box(es) to describe the type(s) of overfill protection equipment installed. In the space provided, specify the year this equipment was installed.
- 453. TANK LEAK DETECTION (SINGLE WALL TANKS ONLY) Check the leak detection system(s) used to comply with monitoring requirements for the tank itself. CHECK ALL THAT APPLY. If you use a leak detection system that is not listed, check "other" and describe the system in the space provided.
- 454. TANK LEAK DETECTION (DOUBLE WALL TANKS) For double wall tanks, tanks in vaults, or tanks with a bladder, check the leak detection system(s) used to monitor the tank secondary containment system. CHECK ONE ITEM ONLY.
- 455. ESTIMATED DATE LAST USED Complete this section only if the tank was closed in place. Enter the date the tank was last used.
- 456. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN TANK Complete this section only if the tank was closed in place. Enter the estimated quantity of hazardous substance remaining in the tank (in gallons).
- 457. TANK FILLED WITH INERT MATERIAL Complete this section only if the tank was closed in place. Check whether or not the tank was filled with an inert material prior to closure.

UNIFIED PROGRAM CONSOLIDATED FORM

TANKS

UNDERGROUND STORAGE TANKS - TANK PAGE 2

PRESSURIZED PIPING (Check all that apply): I. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK, SYSTEM FALURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS. 2. MONTHLY Q.2 GPH TEST 3. ANNUAL INTEGRITY TEST (0.1 GPH) CONVENTIONAL SUCTION SYSTEMS 5. DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING): 7. SELF MONITORING GRAVITY FLOW 9. BIENNIAL INTEGRITY TEST (0.1 GPH) SECONDARILY CONTAINED PIPING GRAVITY FLOW GRAVITY FLOW 9. BIENNIAL INTEGRITY TEST (0.1 GPH) SECONDARILY CONTAINED PIPING 10. CONTINUOUS TURBINS SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS AND (Check one) 11. AUTO PUMP SHUT OFF WIEN A LEAK OCCURS 12. ANNUAL INTEGRITY TEST (0.1 GPH) 13. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF ALABIEL EARD DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION 12. ANNUAL INTEGRITY TEST (0.1 GPH) 13. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF ALABIELE AND VISUAL ALARMS 14. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF ALABIELE AND VISUAL ALARMS 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF ALABIELE AND VISUAL ALARMS 15. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF ALABIELE AND VISUAL ALARMS 16. ANNUAL INTEGRITY TEST (0.1 GPH) 17. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF ALIDIELE AND VISUAL ALARMS 16. ANNUAL INTEGRITY TEST (0.1 GPH) 16. ANNUAL INTEGRITY TEST (0.1 GPH) 17. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOUT FLOW SHUT OFF ALIDIELE AND VISUAL ALARMS 17. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITHOU		Page 2 of 2
SYSTEM TYPE		
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UNDERGROUND FIPING (466. PRESSURIZED PIPING (Check all that apply): □ I. ELECTRONIC LINE LEAK DETECTOR 3.0 GPH TEST WITH AUTO PUMP SHUT-OFF FOR LEAK SYSTEM FALLURE, AND SYSTEM DISCONNECTION + AUDIBLE AND VISUAL ALARMS. □ MONTHLY 0.2 GPH TEST □ 3. ANNUAL INTEGRITY TEST (0.1 GPH) CONVENTIONAL SUCTION SYSTEMS □ DAILY VISUAL MONITORING OF PUMPING SYSTEM + TRIENNIAL PIPING INTEGRITY TEST (0.1 GPH) SAFE SUCTION SYSTEMS (NO VALVES IN BELOW GROUND PIPING): □ 7. SELF MONITORING GRAVITY FLOW '9. BIENNIAL INTEGRITY TEST (0.1 GPH) SECONDARILY CONTAINED PIPING SECONDARILY CONTAINED PIPING SECONDARILY CONTAINED PIPING SECONDARILY CONTAINED PIPING SECONDARILY CONTAINED PIPING PRESSURIZED PIPING (Check all that apply): □ 8. AUTO PUMP SHUT OFF OR LEAKS, SYSTEM FAILURE AND SYSTEM ALLARMS AND (Check one): □ 1.1. AUTOMATIC LINE LEAK DETECTOR (3.0 GPH TEST) WITH FLOW SHUT OFF OR RESTRICTION □ 1.2 ANNUAL INTEGRITY TEST (0.1 GPH) SUCTION/GRAVITY SYSTEM □ 1.3. CONTINUOUS SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.3. CONTINUOUS SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.3. CONTINUOUS SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.3. CONTINUOUS SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.3. CONTINUOUS SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.3. CONTINUOUS SUMP SENSOR WITH AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.3. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.4. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply): □ 1.4. CONTINUOUS SUMP SENSOR WITHOUT AUTO PUMP SHUT OFF AUDIBLE AND VISUAL ALARMS EMERGENCY GENERATORS ONLY (Check all that apply)	D. Grind W. Collinson D. S. Chillians	
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IX. OWNER/OPERATOR SIGNATURE		
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GNATURE OF OWNER/OPERATOR DATE: 2. ZE . ZOU & TK-1-85 47		DATE: 2. ZE . ZCU & TK-1-85 470.
NAME OF OWNER/OPERATOR (print): David McGraw TITLE OF OWNER/OPERATOR: Associate Lab Director / COO 47	NAME OF OWNER/OPERATOR (print): David McGraw	
Y	Y	ncy use only) 474. Permit Expiration Date (Agency use only) 475.

UST - Tank Form Page 2 Instructions (Formerly SWRCB Permit Application Form B)

Please number all pages of your submittal.

- 458. PIPING SYSTEM TYPE (UNDERGROUND) -
- 459. PIPING SYSTEM TYPE (ABOVEGROUND) -
- For items 458 and 459, check the appropriate boxes to describe the type of product/waste piping installed in this tank system. Describe underground and aboveground (if any) piping separately in the columns provided.
- 460. PIPING CONSTRUCTION (UNDERGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for the underground product/waste piping.
- 461. PIPING MANUFACTURER (UNDERGROUND) Enter the name of the piping manufacturer.
- 462. PIPING CONSTRUCTION (ABOVEGROUND) Check the appropriate box(es) to describe the type(s) of containment provided for any aboveground portions of the product/waste piping.
- 463. PIPING MANUFACTURER (ABOVEGROUND) Enter the name of the piping manufacturer.
- 464. PIPING MATERIAL AND CORROSION PROTECTION (UNDERGROUND) Check the appropriate boxes to describe the material(s) of construction of the primary (i.e. inner) underground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 465. PIPING MATERIAL AND CORROSION PROTECTION (ABOVEGROUND) Check the appropriate boxes to describe the material(s) of construction of any primary (i.e. inner) aboveground product/waste piping and indicate whether any cathodic (i.e. corrosion) protection systems are installed.
- 466. PIPING LEAK DETECTION (UNDERGROUND) -
- 467. PIPING LEAK DETECTION (ABOVEGROUND)-
- For items 466 and 467, check the appropriate boxes to describe all leak detection method(s) used to comply with the monitoring requirements for regulated piping.
- 468. DATE DISPENSER CONTAINMENT INSTALLED If the tank system is equipped with dispenser secondary containment (i.e. dispenser sumps or pans) equipment, enter the date that equipment was installed. If the tank system has a dispenser that is not secondarily contained, specify "None" in the space provided for the date. If the system does not include dispensers (e.g. standby generator tank system), enter "N/A."
- 469. DISPENSER CONTAINMENT TYPE Check the appropriate box to describe how dispenser secondary containment is monitored for leaks.
 - SIGNATURE OF OWNER/OPERATOR The owner or an authorized agent of the owner shall sign in the space provided. This signature certifies that the signer believes that all information submitted is true, accurate, and complete.
- 470 DATE CERTIFIED Enter the date the form was signed.
- 471. OWNER/ OPERATOR NAME Print or type the name of the person signing the form.
- 472. OWNER/ OPERATOR TITLE Enter the title of the person signing the form.
- 473. PERMIT NUMBER This space is for agency use only.
- 474. PERMIT APPROVED BY This space is for agency use only.
- 475. PERMIT EXPIRATION DATE This space is for agency use only.

Lawrence Berkeley National Laboratory UST Monitoring & Emergency Response Plan June 10, 2003

(Amended 2/25/08)

Lawrence Berkeley National Laboratory
One Cyclotron Road
Berkeley, California 94720

Lawrence Berkeley National Laboratory UST Monitoring & Emergency Response Plan

Approval Signature Sheet

Approved By: Ron Pauer Group Leader	Date 5
Environmental Services Group Approved By: Don Weber Group Leader	4/8/03 Date
Operations & Maintenance Group, Facilities Division Reviewed By: John Hutchings Technical Supervisor	4/4/03 Date 1
Operations & Maintenance Group, Facilities Division Prepared By: Robert Fox Regulatory Compliance Specialist Environmental Services Group	3/27/03 Date

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1.0 INTRODUCTION

The Berkeley Laboratory maintains eight underground storage tanks (USTs). The largest tanks are two 10,000-gallon tanks located at Building 76. One tank contains diesel fuel and the other contains gasoline. In the event of a spill into the secondary containment, these tanks are designed to continue operation since they support emergency vehicles. The other six USTs support engine generators or boilers and are 4,000-gallons or smaller in size. These six USTs are located at Building 2, 55/90, 66 and 85 and all contain diesel fuel.

The purpose of this plan is to describe how these USTs are monitored and how to respond to a fuel spill at a UST.

2.0 MONITORING PLAN

2.1 Roles and Responsibilities

The Facilities Division is the owner of all the underground storage tanks (USTs) at the Berkeley Lab. As the tank owner, the Facilities Division is responsible for maintaining the USTs in good working order and is responsible for operating the USTs in a manner that meets all regulatory requirements. The Operations and Maintenance Group within the Facilities Division carries out these responsibilities. The Operations and Maintenance Group is responsible for arranging all testing and monitor certification for the USTs. The Operations and Maintenance Group maintains all monitoring documents.

The Operations and Maintenance Group shall give the Environmental Services Group (ESG) at least one week notice prior to conducting any UST certification, testing or repairs. During certification or testing the Operations and Maintenance Group will have one qualified person present to oversee the certification or testing. This person will be familiar with the UST system and have knowledge of UST regulations.

The Environmental Services Group shall notify the City of Berkeley Toxics Division at least 48 hours prior to the Operations and Maintenance Group conducting any UST certification, testing, or repairs. ESG will notify the Department of Energy's Berkeley Site Office (DOE/BSO) in order to coordinate participation under DOE's operational awareness program. ESG will maintain UST permits and prepare any permit modifications as needed. During certification or testing the ESG will have one person present to oversee the certification or testing. This person will be familiar with the UST system and have expert knowledge of UST regulations.

The on site Berkeley Lab Fire Department responds to large spills or spills that have a potential to negatively impact the environment. The Fire Department is managed by the Alameda County

Fire Department under contract to the Berkeley Laboratory. The Fire Department has an automatic aid agreement with Alameda County and the City of Berkeley.

2.2 Daily Inspections

Motor Pool personnel, within the Facilities Division, check the Building 76 UST leak detection monitor each operational day (Monday-Friday). For the other USTs, Operations and Maintenance Group personnel check the UST leak detection monitors daily. Results are logged into UST logbooks located at each UST area. Details regarding daily inspections are found in Operations and Maintenance Group procedures for each UST area (see Appendix B).

2.3 Annual Monitor Certification

An individual (third party vendor or in-house staff) performs leak detection monitor certification annually. This individual shall be certified by the monitor manufacturer and re-certified every 36 months. (Facilities maintains copies of monitor manufacturer certifications.) Typically this work is done in October or November and includes testing of the leak detection monitor, all liquid sensors, and the in-tank probe. Each monitor, sensor, and probe must be tagged and include the date of certification and the individual's contractor or tank tester license number.

2.4 Annual Product Precision Line Test (primary piping) and Annual Mechanical Line Leak Detector Test (red jacket)

A vendor that is a licensed tank tester by the State of California annually performs product precision line testing and mechanical line leak detector (red jacket) testing. (Facilities maintains a copy of the license or confirms the license on State Water Resources Control Board website during the procurement process.) Typically this work is done in October or November and includes testing of pressurized piping and mechanical line leak detectors at Building 76 USTs and suction piping at Building 2, 55/90, 66, and 85 USTs. Note that the same individual may also perform the monitor certification if they are certified by the monitor manufacturer.

2.5 Secondary Containment Testing

Performed by a vendor that is a licensed tank tester, licensed tank installer, or holds a current class "A" general engineering contractor license, C-10 electrical contractor license, C-34 pipeline contractor license, C-36 plumbing contractor license, or C-61 (D40) limited specialty service station equipment and maintenance contractor license issued by the Contractors State License Board. A tank tester license and a tank installer license are held by the individual. A technician may work under a CSLB license. (Facilities maintains a copy of the license or confirms the license on Contractors State License Board website or State Water Resources Control Board website.)

Spill buckets are tested <u>annually</u>. Every 36 months secondary containment testing is conducted that includes testing of the tank's annular space, product/turbine sumps, and secondary containment piping. The Berkeley Lab qualifies for two exemptions from secondary containment testing. (1) Systems with suction piping include Buildings 2, 55/90, 66, and 85. The piping and sumps for systems with suction piping are exempt from secondary containment testing requirements. (2) The UST at Building 85 has its annular space filled with brine and so its annular space is exempt from secondary containment testing.

2.6 Building 76 UST - Gasoline Vapor Recovery Testing

The fuel dispensers at the Building 76 underground storage tanks are "Balance Phase II vapor recovery systems". Per Air District requirements (Rule 8-7-302.14) "Balance Phase II vapor recovery systems" for gasoline dispensing require back pressure testing every 12 months. Currently, the Bay Area Air Quality District does not have any certification requirements for the person performing the back pressure testing.

2.7 Records Retention

All records are maintained on site for a minimum of three years and, afterwards, may be sent to LBNL Archives or maintained on site indefinitely. UST monitor printouts are considered records and are to be maintained on site at either the Motor Pool Office (Building 76 UST) or at the Operations and Maintenance Office (all other USTs) for the minimum three-year period. Other records which require retention include but are not limited to the following: UST daily inspection logbooks, annual monitor certification reports, secondary containment testing reports, gasoline vapor recovery system back pressure testing reports, product precision line testing reports, mechanical leak line testing reports, City of Berkeley inspection reports, and any other reports which document compliance activities.

3.0 RESPONSE PLAN

3.1 Small versus a Large Spill

Whether a small spill or a large spill occurs, notify Robert Fox, environmental specialist, at extension 7327. If Robert Fox is not available, notify Ron Pauer, Environmental Services Group Leader, at extension 7416. If the spill occurs after hours, call the Fire Department at extension 7911.

Small Spill - In general, a small spill will have the following attributes:

- Less than 5 gallons
- Can be cleaned up by two men in an hour
- No injury has occurred
- The spill has not entered a storm drain.

To clean up small spills a spill kit (20 gallon Overpak plastic drum) is located at each UST. These spill kits typically contain spaghetti socks, sump skimmers, skimming mat pads, gloves, booties, safety glasses, duct tape, and Tyvek overalls. The 20 gallon Overpak spill kits are maintained by the Operations and Maintenance Group of the Facilities Division. Additional spill clean up equipment is described in Section 3.3.

<u>Large Spill</u> – For a large spill the Fire Department is called at 7911. The Fire Department will coordinate the emergency response. Clean up is typically performed by the Operations and Maintenance Group of the Facilities Division (tank owner) and may be assisted by the Waste Management Group of the Environment, Health & Safety Division.

3.2 First Response - Large Spill

First response emergency services are provided by the Berkeley Lab's on-site fire station at Building 48. Besides equipment and staff on-site, the on-site fire station has an automatic aid agreement with Alameda County and the City of Berkeley.

Other Berkeley Lab groups that may assist the Fire Department in first response are the Maintenance and Operations Group, the Waste Management Group, the Environmental Services Group, the Site Access and Security Group, and the Health Services Group. As mentioned earlier, the Maintenance and Operations Group typically would clean up a fuel spill from an underground storage tank. The Waste Management Group would assist to ensure the safe offsite transport and disposal of any hazardous waste resulting from a fuel spill. The Environmental Services Group would provide spill/release, assessment, and reporting to the City of Berkeley and any other regulatory agencies. The Site Access and Security Group would provide traffic control if needed and the Health Services Group would provide first aid if needed. Additional detail regarding the emergency response organization at the Berkeley Lab may be found in LBNL's Master Emergency Plan, revision 1, 4/1/99, PUB-533.

3.3 Operation & Maintenance Group's Spill Clean Up Equipment

Besides the 20 gallon Overpak spill kits located at each UST, the Operation and Maintenance Group has additional equipment strategically located throughout the Laboratory. Spill clean-up equipment may be found in Building 76 in the storage area above room 212 and in a cargo

container at Building 88. This equipment includes spaghetti socks, pig booms, skimming mat pads, kitty litter/vermiculite, sump skimmers, and drain blockers and plugs. Air pumps and mechanical pumps are available in Building 76 for motor fuel spill clean up. Additional emergency facilities and equipment are more fully described in LBNL's *Master Emergency Plan, revision 1, 4/1/99*, PUB-533.

3.4 Fire Department Equipment at Building 48

The following equipment is available for emergency response:

- 1 fire engine, 1250 gpm Type I, in service (carries 5 gallons of absorbent vermiculite)
- 1 fire engine, 1000 gpm Type I, in reserve (carries 5 gallons of absorbent vermiculite)
- 1 Hazardous Materials response vehicle, 14ft. panel van
- 4x4 grass-firefighting truck
- Intensive care ambulance
- Vetter System, used for diking storm drains
- Standard turnout clothing for each firefighter and suits that provide full encapsulation

Additional emergency facilities and equipment are more fully described in LBNL's Master Emergency Plan

3.5 Equipment Available Through Automatic Aid

Alameda County – 2 hazardous materials response vehicles City of Berkley – 1 hazardous materials response vehicle

APPENDIX A - Key Personnel and Phone Numbers

Security & Emergency Operations Group

Fire Department (emergency number)	x 7911
Dan Lunsford, Group Leader	x 6016
Environmental Services Group (Spill Assessment Reporting)	
Robert Fox, Environmental Specialist	x 7327
Ron Pauer, Group Leader	x 7614
Operations and Maintenance (UST Operator)	
Mike Botello, Designated UST Operator	x 7939
O & M Dispatch	x 7941
Ken Fletcher, Supervisor	x 5770
Waste Management Group	
Nancy Rothermich, Group Leader	x 4644



APPENDIX B – UST Operating Procedures

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-3-2, TK-4-2

APPLICATION

Monitoring of underground storage tanks TK-3-2 and TK-4-2 to ensure that the tanks are not leaking. Tanks TK-3-2 and TK-4-2 are underground diesel fuel storage tanks located on the north side of Bidg 2 near the liquid nitrogen tank. TK-3-2 supplies fuel oil for boilers BR-1-2 and BR-2-2. TK-4-2 supplies fuel to emergency generator EG-68-2. The tank locations and system overview are shown in Figures 1 and 2. The procedure is divided into daily and yearly actions. In addition to the monitoring performed by Facilities Department technicians, the Maintenance Superintendent arranges for calibration of the Veeder Root Leak Detection System on an annual basis. Prescribed tank and line tightness tests may also be performed by outside contractors.

SPECIAL INSTRUCTIONS

CONTACT:

In case of an emergency such as a fire or large spill (>5 gallons) call:

- Fire Department, x7911
- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

In case of a small spill:

- Use a spill kit to mitigate and contain spills.
- Prevent fuel spills from reaching storm drains.

For small spills call:

- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

After hours:

- Fire Department, x7911
- EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)
- Training required: Use of Veeder Root TLS-300 Leak Detection System, tank and sump monitoring, and emergency response.
- Records: Retain monitor printouts in the Maintenance Office for a minimum of three years.
- Tank Specifications
 - Tank TK-3-2. Double-walled, fiberglass, 4,000-gallon diesel fuel tank; supplies BR-1-2 and BR-2 2; installed in 1988; City of Berkeley Registration ID No. 2-1.
 - Tank TK-4-2. Double-walled, fiberglass, 1,000-gallon diesel fuel tank; supplies EG-68-2; installed in 1988; City of Berkeley Registration ID No. 2-2.
 - Tank and sump leak detection. Interstitial monitoring (Veeder Root TLS-300).
 - Piping. Suction, double wailed, fiberglass.

WORK STEPS-DAILY

- 1. Inspect Veeder-Root TLS-300 Leak Detection System monitor for proper functioning by inspecting the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages and drastic changes in readings. If there is no warning or alarm condition active, then the monitor displays the "All Functions Normal" message. Monitor is on west wall of Bldg 2 Rm 129A.
- If the Veeder-Root 300 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses the problem and contacts EH&S Environmental Services.
- 3. Enter initials, time, date, and results of alarm check and visual inspection in bound logbook. Logbook is located in Bidg 70, room 189.
- 4. Replace the monitor's printer paper supply when a red stripe appears on the printer paper.

WORK STEPS-Yearly

 The Maintenance Superintendent arranges for annual certification of the Veeder-Root TLS 300 monitor and sensors by a Veeder-Root certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files the original record of test results and sends copies to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

REV NO. 0 SME/Title APPROVER/Title DATE EFFECTIVE DATE

O SME/Title APPROVER/Title DATE

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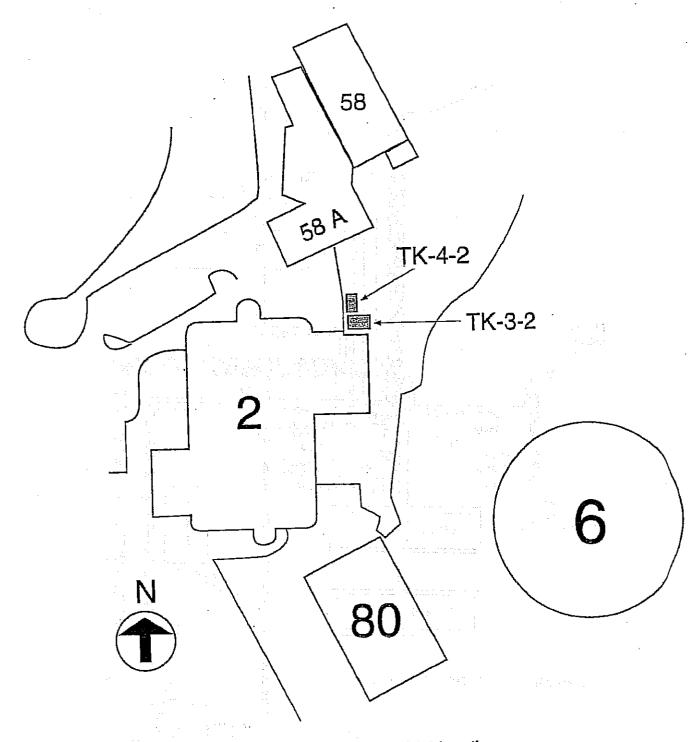


Figure 1: Aerial View of TK-3-2 Location

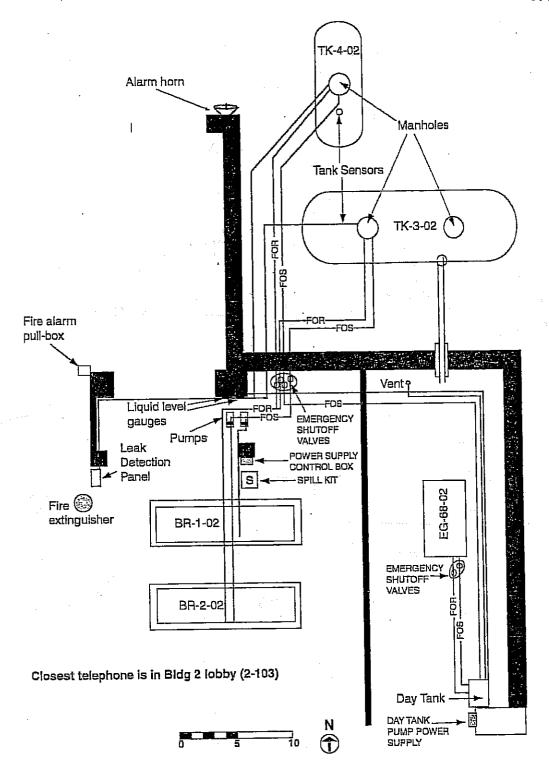


Figure 2: TK-3-2 System Overview

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-1-55

APPLICATION

Applies to Bldg 55. This procedure outlines steps for monitoring of underground storage tank TK-1-55 to ensure that the tank is not leaking. Tank TK-1-55 is an underground diesel fuel storage tank located between Buildings 55 and 90. This tank supplies fuel to emergency generator EG-69-55, located outside Bldg 90. The procedure is divided into daily and yearly actions. Figures 1 and 2 show the tank location and system overview. In addition, the Maintenance Superintendent arranges for yearly maintenance and calibration of the Veeder-Root leak detection system. Prescribed tank and line tightness tests may also be performed by outside contractors.

SPECIAL INSTRUCTIONS

CONTACT:

In case of an emergency such as a fire or large spill (>5 gallons) call:

- Fire Department, x7911
- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

In case of a small spill:

- Use a spill kit to mitigate and contain spills.
- Prevent fuel spills from reaching storm drains.

For small spills call:

- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

After hours:

- Fire Department, x7911
- EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)

Records:

- Documentation of monitoring is kept inside generator door and in Facilities Maint Office (76-212A). Retain monitor printouts in the Maintenance Office for a minimum of three years.
- Training required: Use of Veeder Root TLS-300 Leak Detection System, interstitial monitoring, yearly maintenance and emergency response.

TANK SPECIFICATIONS

TK-1-55 Tank: Double-walled steel with fiberglass reinforced plastic corrosion protection, 1,000-gallon Glasteel diesel fuel tank; installed in 1986; City of Berkeley Registration ID No. 55-1.

Tank leak detection: Interstitial monitoring, liquid level gauging system, Veeder Root TLS-300).

Piping: Suction, double walled, galvanized.

Piping leak detection: Interstitial monitoring through pipe sump.

WORK STEPS-Daily

- Inspect Veeder-Root Leak Detection System monitor for proper functioning by inspecting the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages and drastic changes in readings. If there is no warning or alarm condition active then the monitor displays the "All Functions Normal" message. Monitor is on north wall of Bldg 55B.
- 2. If the Veeder-Root TLS-300 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses the problem and contacts EH&S Environmental Services.
- 3. Visually inspect aboveground piping.
- 4. Enter initials, time, date, and results of alarm check and visual inspection in bound logbook. Logbook is kept inside the engine generator door.
- 5. Replace the monitor's printer paper supply when a red stripe appears on the printer paper.

WORK STEPS—YEARLY

1. The Maintenance Superintendent arranges for annual certification of the Veeder-Root TLS 300 monitor and sensors by a Veeder-Root certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files the original record of test results, and sends copies to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

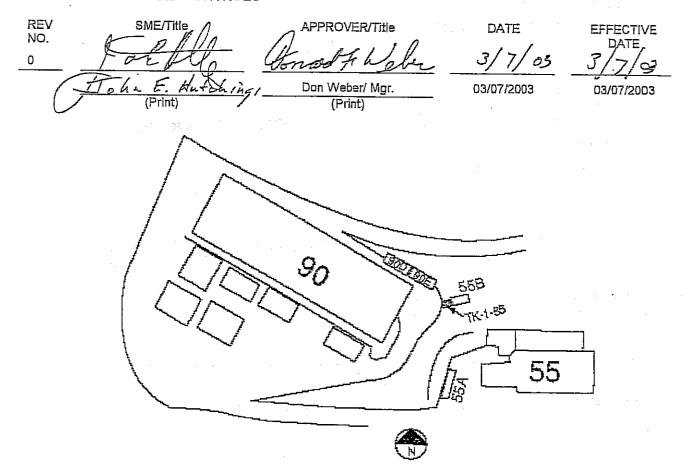


Figure 1: Aerial View of TK-1-55 Location

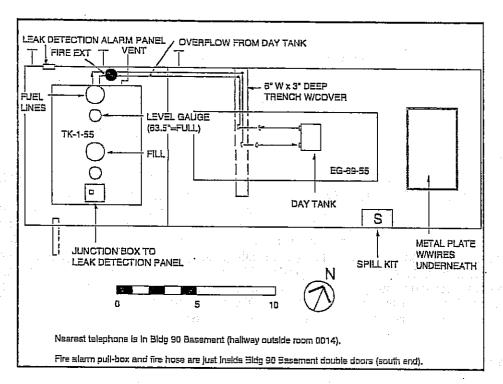


Figure 2: TK-1-55 System Overview

OPERATING PROCEDURE

Both TANK

7/17/03

UNDERGROUND STORAGE TANK MONITORING: TK-2-66, TK-4-66

R. Fox

APPLICATION

This procedure outlines steps for monitoring of underground storage tanks TK-2-66 and TK-4-66 to ensure that the tank is not leaking. Tanks TK-2-66 and TK-4-66 are underground diesel fuel storage tanks located beneath a landscaped slope on the northwest side of Bldg 66. TK-2-66 supplies diesel fuel to emergency generator EG-67-66, and TK-4-66 supplies diesel fuel to boilers BR-1-66 and BR-2-66. The INCON TS-1000 Leak Detection System has a built-in alarm that is triggered by the presence of fuel or water at the sensor, breakage in the cable, or a short circuit in the system wiring. Daily inspection of the system is necessary to ensure proper functioning. Illumination of the green light only indicates normal system operation. Figures 1 and 2 show the tank locations and system overview, respectively. The Maintenance Supervisor annually arranges for calibration and testing of the INCON TS-1000 by a certified INCON technician. In addition, prescribed tank and line tightness tests may be performed by outside contractors.

SPECIAL INSTRUCTIONS

CONTACT:

In case of an emergency such as a fire or large spill (>5 gallons) call:

- Fire Department, x7911
- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

In case of a small spill:

- Use a spill kit to mitigate and contain spills.
- Prevent fuel spills from reaching storm drains.

For small spills call:

- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

After hours:

- Fire Department, x7911
- EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)
- Training required: Use of INCON TS-1000 Detection System, suction pipeline monitoring, emergency response.
- Records: Retain monitor printouts in the Maintenance Office for a minimum of three years.
- Tank Specifications
 - Tank TK-2-66. Double-walled steel with fiberglass reinforced plastic corrosion protection,
 2,000-gallon Glasteel diesel fuel tank; installed in 1987; City of Berkeley Registration ID No.
 66-2.
 - Tank TK-4-66. Double-walled steel with fiberglass reinforced plastic corrosion protection,
 4,000-gallon Glasteel diesel fuel tank; installed in 1987; City of Berkeley Registration ID No.
 66-1.
 - Tank and sump leak detection. Interstitial monitoring: INCON TS-1000.
 - Piping. Suction, single walled steel w/ coating.

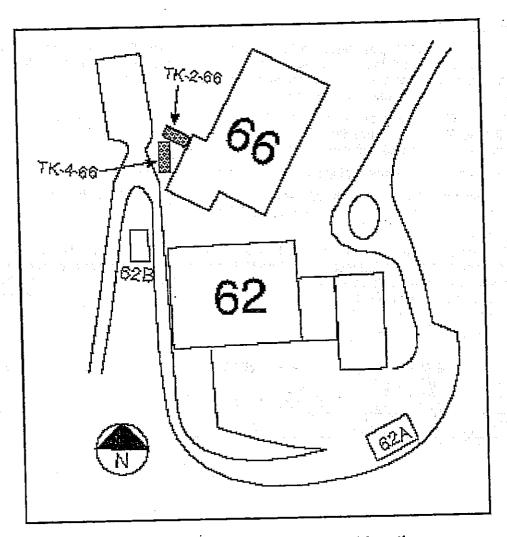


Figure 1: Aerial View of TK-2-66, TK-4-66 Location

WORK STEPS-Daily

- Inspect INCON TS-1000 Leak Detection System monitor for proper functioning by inspecting the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages and drastic changes in readings. Monitor is on north wall of Bldg 66 Rm 110, next to day tank TK-3-66.
- 2. If the INCON TS-1000 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses problem and contacts EH&S Environmental Services.
- 3. Visually inspect aboveground piping and document results in bound logbook.
- 4. Enter initials, time, date, and results of alarm check and visual inspection in bound blue logbook. Logbook is on ledge just inside the door to Bldg 66 Rm 110.

WORK STEPS-Yearly

1. The Maintenance Superintendent arranges for annual certification of the INCON-TS-1000 monitor and sensors by an INCON certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files the original record of test results, and sends copies to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

APPROVER/Title DATE EFFECTIVE DATE

O SME/Title APPROVER/Title DATE

DATE

DATE

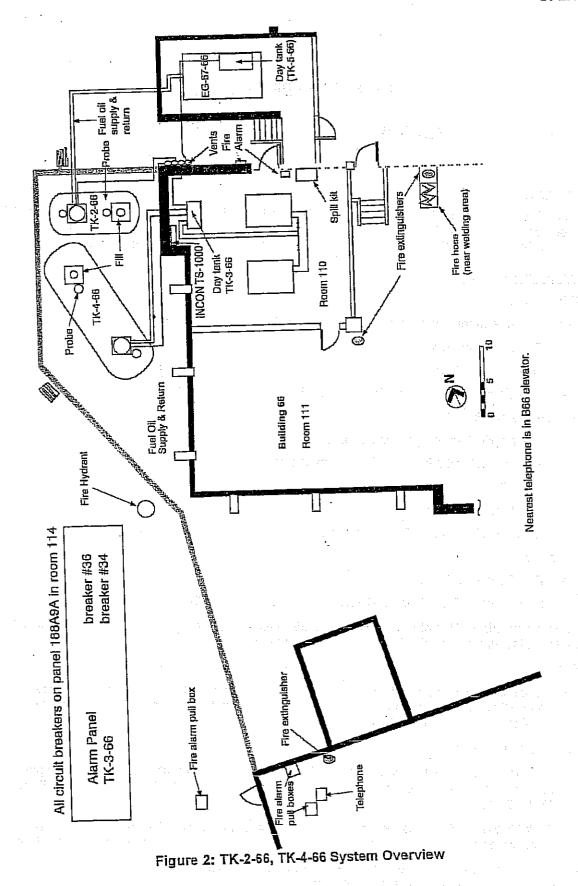
DOTALLA Weber

Don Weber/ Mgr.

(Print)

O 3/07/2003

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OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-5-76, TK-6-76

APPLICATION

Monitoring of underground fuel storage tanks TK-05-76 and TK-06-76 for leaks. Tanks TK-05-76 and TK-06-76 are located on the south side of Bidg 76 outside the motor pool offices. TK-05-76 supplies unleaded gasoline and TK-06-76 supplies diesel fuel. Figures 1 and 2 show the tank locations and system overview.

SPECIAL INSTRUCTIONS

CONTACT:

In case of an emergency such as a fire or large spill (>5 gallons) call:

- Fire Department, x7911
- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

In case of a small spill:

- Use a spill kit to mitigate and contain spills.
- Prevent fuel spills from reaching storm drains.

For small spills call:

- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

After hours:

- Fire Department, x7911
- EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)
- Training required: Use of Veeder Root TLS-350 Tank Level Sensor, Red Jacket mechanical line leak detector, inventory reconciliation, and emergency response.

Records:

Monitoring logs and Veeder Root TLS-350 printouts are kept in the Motor Pool Office (Room 115, Bldg 76) near the monitoring control panels. Retain monitor printouts in the Maintenance Office for a minimum of three years.

Tank Specifications

- Tank TK-5-76. 10,000-gallon double-walled Glasteel (steel with fiberglass reinforced plastic corrosion protection) unleaded gasoline fuel tank; installed in 1990; City of Berkeley Registration ID No. 76-1.
- Tank TK-6-76. 10,000-gallon double-walled Glasteel (steel with fiberglass reinforced plastic corrosion protection) diesel fuel tank; installed in 1990; City of Berkeley Registration ID No. 76-2.
- Tank, Sump and Dispenser Pan Leak Detection: Automatic tank gauging and leak detection using the Veeder-Root TLS-350 tank level sensor and interstitial monitoring for vapor and secondary containment.
- Piping. Pressurized, double-walled, fiberglass.

Piping Leak Detection. Mechanical line leak detector (Red Jacket).

WORK STEPS--Daily

- Check Veeder-Root TLS-350 display and printout for proper functioning, indication of pass/fail, and drastic changes in readings. If there is no warning or alarm condition active, then the monitor displays the "All Functions Normal" message. The Veeder-Root prints the date and time, individual readings, and the word PASS, FAIL, or INVALID. The monitor is located on the south wall of the Motor Pool office (Bldg 76, Rm 123J closet).
- If the tank has failed a test, or if Veeder-Root is not operating properly, notify Motor Pool personnel, the Maintenance Superintendent, and EH&S immediately. The Maintenance Superintendent assesses 2. the problem and contacts EH&S Environmental Services.
- Tear off the Veeder-Root tape and file it in Motor Pool Office. The TLS-350 monitor is in the Bldg 76 3. Rm 123J closet.
- Inspect the Veeder-Root monitor. Record in log book: 4.
 - Date and time system was checked
 - Monitor displays "All Functions Normal" message (yes/no)
 - Initials of person performing check
 - Report any malfunction to Motor Pool, Maintenance Superintendent, and EH&S.
- Enter pump meter reading in log in Motor Pool office. Reconcile log entries with Veeder-Root data. If you note any large discrepancies, report them to Motor Pool Supervisor and Maintenance 5. Superintendent immediately. Log entries and all records pertaining to the underground storage tank system are kept for three years in the Motor Pool office for inspection by the City of Berkeley, BAAQMD inspectors, and EH&S.
- As needed. Remove access covers to pumps and use a current calibrated hydrocarbon vapor detector to check valve systems for leaks, oxygen levels, and hydrocarbon levels. For entry into the 6. gasoline or diesel turbine sumps follow procedure OPER-033, Confined Space Atmospheric Testing, and complete a confined space permit. The atmosphere should be checked with a gas meter for oxygen content and the lower explosive limit (LEL). Forced air shall be supplied to the sumps during work in the confined space. See Facilities Department procedures: OPER-082, Gastech Operation, Calibration; OPER-033, Confined Space Atmospheric Testing; ADMN-027, Confined Space Permit.
- Record data in daily maintenance logbook. Logbook is located in B76 Motor Pool office. 7.

WORK STEPS-Yearly

The Maintenance Superintendent arranges leak monitoring system certification by a Veeder-Root certified technician and prescribed tank and/or piping tightness tests by a State-licensed tank tester (usually an outside contractor). Upon receipt of contractor's report, Maintenance Superintendent signs, dates, and files originals and sends copies of contractor's report to EH&S Environmental Services.

RESPONSIBILITIES AND CONTROLS

EFFECTIVE APPROVER/Title REV DATE NO. ald harber 03/07/2003 03/07/2003 Don Weber/ Mgr. (Print)

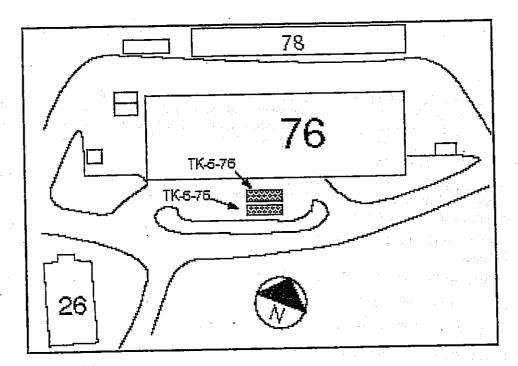


Figure 1: Aerial View of Tank Locations Figure 7: Action views of the property of the

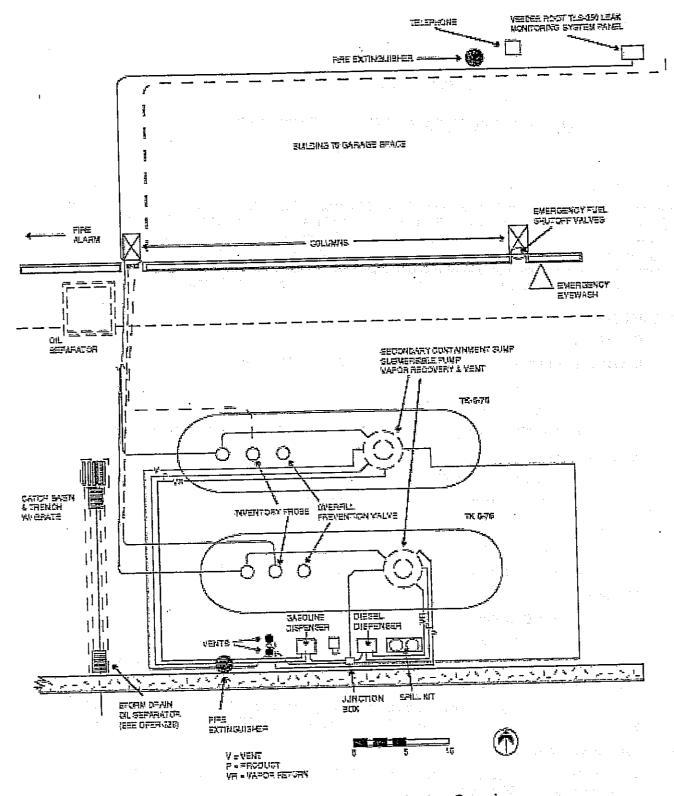


Figure 2: TK-05-76 & TK-06-76 System Overview

OPERATING PROCEDURE

UNDERGROUND STORAGE TANK MONITORING: TK-1-85

APPLICATION

Monitoring of underground fuel storage tank TK-1-85 for leaks. Tank TK-1-85 is an underground diesel fuel storage tank located on the east side of Bldg 85. The tank location and system overviews are shown in Figures 1 and 2. The procedure is divided into daily, weekly, and yearly actions. In addition to the monitoring performed by Facilities Division Plant Maintenance Technicians, the Maintenance Superintendent annually arranges for calibration and testing of the INCON TS1000 by a certified INCON technician. In addition, prescribed tank and line tightness tests may be performed by outside contractors.

SPECIAL INSTRUCTIONS

CONTACT:

In case of an emergency such as a fire or large spill (>5 gallons) call:

- Fire Department, x7911
- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

In case of a small spill:

- Use a spill kit to mitigate and contain spills.
- Prevent fuel spills from reaching storm drains.

For small spills call:

- Maintenance Office, x 5481
- EH&S Environmental Services: Robert Fox, x7327 or Ginny Lackner, x7413

After hours:

- Fire Department, x7911.
- EH&S Phone Duty Officer, 510-206-2305 (cell) or 510-425-0616 (pager)
- Training required: Use of INCON TS-1000 EF1 leak detection and ATG system, suction pipeline testing, and emergency response.
- Records: Documentation of daily or weekly monitoring system checks is kept in Bldg 85, in hall outside Room 102. Retain monitor printouts in the Maintenance Office for a minimum of three years.
- Tank Specifications
 - Tank TK-1-85. 2,500-gallon double-walled FRP (reinforced fiberglass) diesel fuel tank. The tank's annular space is filled with brine.
 - Tank and Sump Leak Detection. Automatic tank gauging and leak detection: INCON TS-1000.
 - Piping, Suction, double-walled, fiberglass.

WORK STEPS--Daily

- 1. Inspect INCON TS-1000 monitor for proper functioning by examining the monitor LCD display and printout. Review monitor display and printouts for alarm status, any indication of pass/fail, error messages, and drastic changes in readings. Monitor is in Bidg 85, in the hall outside Rm 102.
- 2. If the INCON TS-1000 is not operating properly or is in alarm, notify the Maintenance Supervisor immediately. The Maintenance Supervisor notifies the Maintenance Superintendent, who assesses the problem and contacts EH&S Environmental Services.
- 3. Visually inspect aboveground piping and document the results in the bound logbook.
- 4. Enter initials, time, date, and results of alarm check and visual inspection in bound blue logbook. Logbook is in Bldg 85, in hall outside Rm 102.

WORK STEPS-Weekly

1. Deliver INCON TS-1000 printouts to the Maintenance Superintendent. The Maintenance Superintendent reviews, signs, dates, and files printouts.

WORK STEPS—Yearly

1. The Maintenance Superintendent arranges for annual certification of the INCON TS-1000 monitor and sensors by an INCON-certified technician. The Maintenance Superintendent may also arrange for prescribed tank and line tightness tests to be performed by a State-licensed tank tester. The Maintenance Superintendent signs, dates, and files original record of test results, and sends copies to EH&S Environmental Services Group.

RESPONSIBILITIES AND CONTROLS

REV NO.

1

SME/Title APPROVER/Title DATE EFFECTIVE DATE

1

Constat F Wale 3/7/03 3/7/63

Don Weber/ Mgr. 03/07/2003 03/07/2003

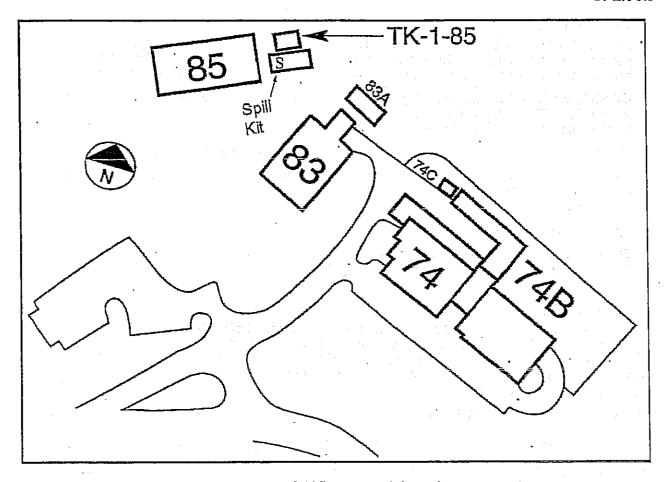


Figure 1: Aerial View of Tank Locations

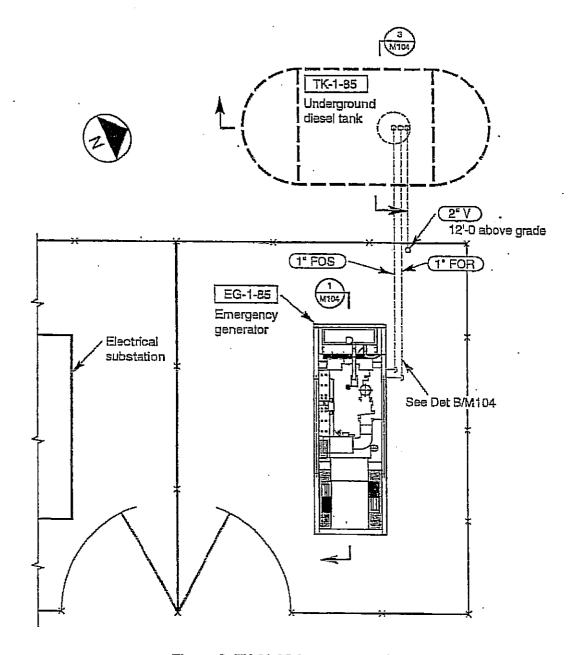


Figure 2: TK-01-85 System Overview



Amendment 022508

Record of Changes

Page 6, Appendix A	•	Remove Bob Berninzoni and replace with Ken Fletcher, UST supervisor.
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FIXED TREATMENT UNITS

- Permit
- Permit by Rule Annual Report



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UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – FACILITY PAGE

			Page <u>1</u> of <u>49</u>				
I. FACILITY IDENTIFICATION							
BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3 FACILITY ID#							
Lawrence Berkeley National Laboratory							
II. STATUS							
NOTIFICATION STATUS 600. PERMIT STATUS (Check all that apply)							
a. Amended	☑ a. Facility Permit ☐ d. Variance						
☐ b. Initial	□ b. Interim Status □ e. Consent Agreement						
□ c. Renewal (PBR Only) □ c. Standardized Permit							
III. NUMBER OF UNITS AT FACILITY							
I as the second		each one unit notification page for each unit except CE-CL)	602.				
A Conditionally Exempt - St	mall Quantity Treatment (CESQT) (May	not function under any other tier.)					
B Conditionally Exempt Spe	ecified Wastestream (CESW)		· · · · · · · · · · · · · · · · · · ·				
C. 3 Conditionally Authorized	(CA)	and the first of the second of the first of the					
D. 3 Permit by Rule (PBR)	entra de la companya de productivo.		* * .*				
E Conditionally Exempt – L	imited (CEL)						
F Conditionally Exempt Co	mmercial Laundry (CE-CL) (No unit p	ge is required for laundries.)					
G. 6 TOTAL UNITS (Must equ	ual the number of unit notification pages	attached plus the number of CE-CL units.)	+ * * * * * * * * * * * * * * * * * * *				
	IV. CERTIFICATION	ON AND SIGNATURE					
Tiered Permitting Certification - I certify that the unit or units described in these documents meet the eligibility and operating requirements of state statutes and regulations for the indicated permitting tier, including generator and secondary containment requirements. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete.							
I am aware that there are substantial penalt	ies for submitting false information, inc	uding the possibility of fines and imprisonment for knowing	violations.				
SIGNATURE OF OWNER/OPERATOR	O DA	Z Z9 2008	603.				
NAME OF OWNER/OPERATOR 604. TITLE OF OWNER/OPERATOR							
David McGraw Associate Laboratory Director / Chief Operating Officer							
REQUEST FOR SHORTENED REVIEW		Yes 🛛 No					
State Reason for Request:							
		and produced and sometimes of the second	T				
and the control of th							
V. ATTACHMENTS (Check if attached)							
ALL tiers except CE-CL (Laundries) must	submit:	PBR ONLY					
⊠ 2. Plot Plan (or other grid/map)		2. Notification of local agency or agencies					
E E L'OFF INN (et enter granne)		3. Notification of property owner, if different from b	usiness owner				
7BR & CA ONLY:	•						
11. Closure Financial Assurance (form	erly DTSC form 1232)						
Self Certified (< \$10,000)	•		•				
☑ 2. Prior Enforcement History, if applicable							
EA 2. 1101 PRIO CONTOUR LEGION 11 tt uppn	· · · · · · · · · · · · · · · · ·	<u> </u>					

Onsite Hazardous Waste Treatment Notification – Facility Form Instructions (Formerly DTSC Form 1772)

Complete this form if your facility performs onsite treatment of hazardous waste(s) generated onsite and the facility is eligible und the Conditional Exemption (CE), Conditional Authorization (CA), or Fixed Treatment Unit (FTU) Permit by Rule (PBR) tiers.

Submit one Onsite Hazardous Waste Treatment Notification - Facility page per facility, regardless of the number of treatment units located at the site. Attach separate Onsite Hazardous Waste Treatment Notification - Unit and Waste and Treatment Process Combinations pages for each treatment unit at the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 600. NOTIFICATION STATUS Check whether this notification is your initial notification under the Tiered Permitting system; an amended notification; or, for PBR only, a renewal notification.
- 601. PERMIT STATUS If this facility has a state-issued hazardous waste permit or grant of authorization, check the appropriate box to indicate the permit status.
- 602. NUMBER OF UNITS Enter the number of units you operate at this facility in each permit tier or category.

SIGNATURE OF OWNER/OPERATOR - The business owner, or officer of the company who is authorized to make decisions for the facility and who has operational control, shall sign in the space provided. In most companies, this is not the environmental compliance or technical staff. Original signatures are required.

- 603. DATE CERTIFIED Enter the date the form was signed.
- 604. OWNER/ OPERATOR NAME Print or type the full name of the person signing the page.
- 605. OWNER/ OPERATOR TITLE Enter the title of the person signing the page.

REQUEST FOR SHORTENED REVIEW PERIOD - Generators operating under the PBR tier are not authorized until they are notified by their Certified Unified Program Agency (CUPA). Generators operating under CA and CE are legally authorized 60 days after submitting a complete notification. The time period between notification and authorization may be shortened if the owner or operator shows good cause. Check the appropriate box to indicate whether or not you are requesting to be authorized sooner than the standard 60-day period. If you check "Yes," state the reason(s) for your request (attach additional sheets if needed). Authorization will be automatically effective on the date the completed notification is received by your CUPA.

ATTACHMENTS - Check the appropriate boxes to indicate that all required document submittals are attached to this form. (*Note: Commercial Laundries are <u>not required to provide attachments.</u>)*

<u>ALL FACILITIES:</u>

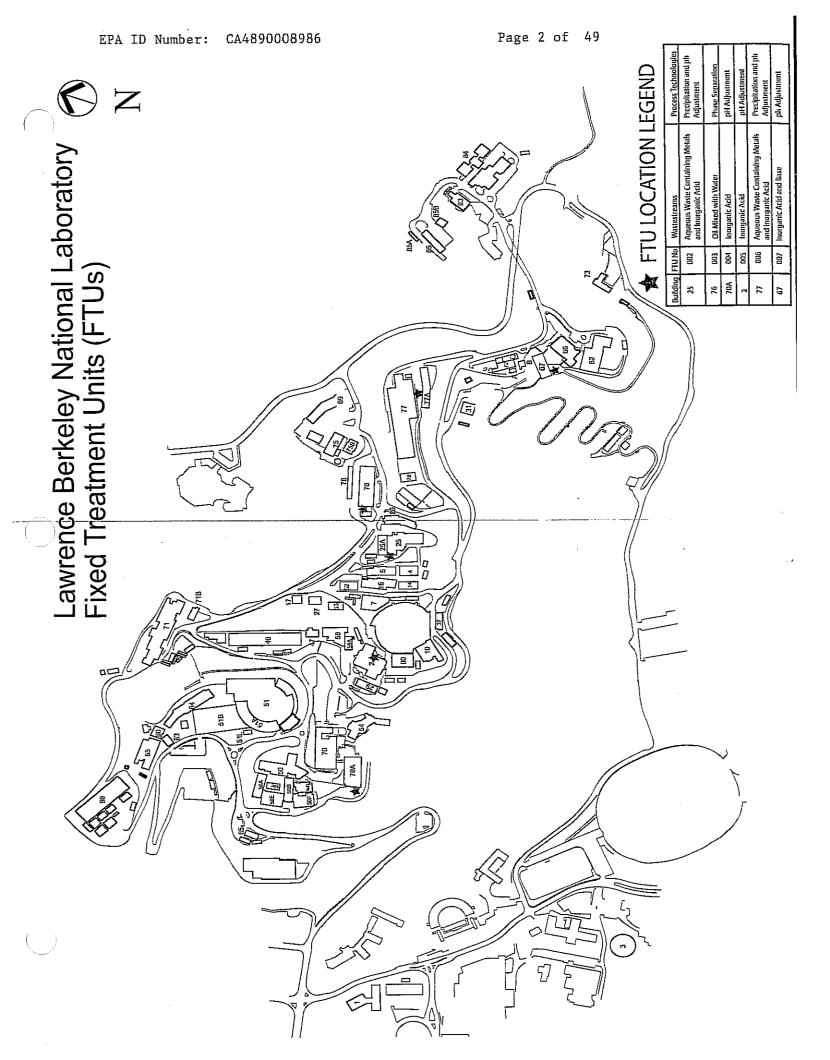
- 1. Complete an Onsite Hazardous Waste Treatment Notification Unit form and Waste and a Treatment Process Combinations form for each unit covered by this notification.
- 2. Provide a plot plan or map detailing the location(s) of the unit(s) at this facility. Clearly indicate the facility boundaries and major features. The Storage Map prepared for your Hazardous Materials Business Plan may be used as long as the unit numbers for the units covered by this notification are shown.

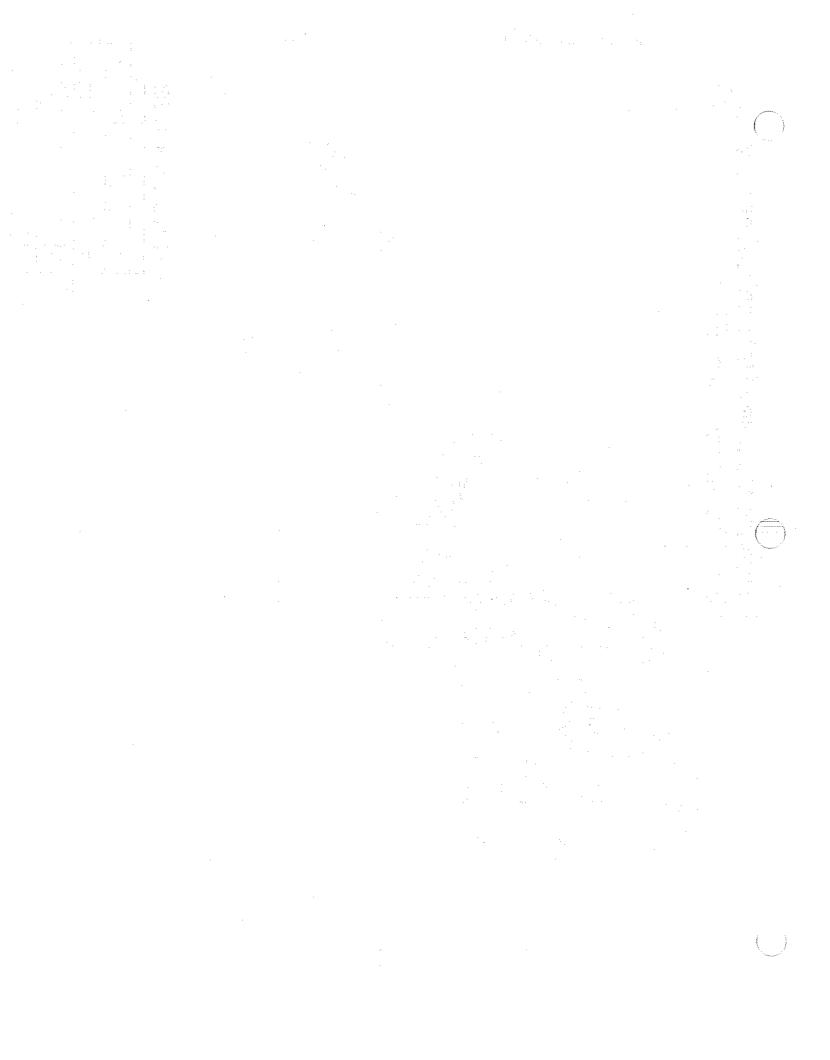
PBR and CA ONLY:*

- 1. Complete and attach the Certification of Financial Assurance for Closure (UPCF form HWF 1232). Check the appropriate box to indicate whether you have Self-Certified (closure costs must be less than \$10,000) or are submitting a financial mechanism.
- 2. Prior Enforcement History information is required only if your facility was the subject of any convictions, judgments, settlements or final orders resulting from an action by any local, state, or federal environmental, hazardous waste, or public health enforcement agency. If applicable, attach a statement or summary that lists the cases for the last three years and provide a copy of the cover sheet from each document (conviction, settlement, etc.). The summary should include case and docket number, name and address of the agency, date, brief explanation, type of case (criminal, civil, administrative) and final resolution (including fines and penalties).

PBR ONLY:

- 1. 22 CCR §67450.2(b)(3)(G) requires that tank and/or containment system certifications be submitted, when applicable. Specific standards are in 22 CCR §66264.175(c) (containers) and 22 CCR §66265.191(a) and 66265.192(a) (tanks).
- 2. Notification of local agencies. Attach documentation of the other local agencies notified of your operation. (e.g. sewer agency).
- 3. Notification of property owner. If the property owner is different than the operator, provide documentation that the facility operator has notified the property owner of the operation of this hazardous waste treatment unit under PBR.
- * For PBR and CA, a Phase I environmental assessment must be submitted to DTSC, not to your CUPA. The assessment checklist and instructions are available from DTSC. Call (916) 324-2423 or write to the DTSC-Unified Program Section at 400 P Street, 4th Floor, P.O. Box 806, Sacramento, CA 95182-0806. Completed Phase I assessments should be submitted to the same address.





UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION - UNIT PAGE

r ²				(One page and attachments per unit)		
		; ;	. : ' '	Page 3_ of 49_		
FACILITY ID#		1.	BUSINESS NAME (Some as FACILITY NAME)	ME or DBA – Doing Business As) 3.		
			Lawrence Berkeley National La	boratory		
I. TREATMENT UNIT						
UNIT ID# 606.	UNIT TYPE/TIER	607.	NUMBER OF TANKS 608.	NUMBER OF CONTAINERS/ 609. TREATMENT AREAS		
FTU 002	a. CESOT		6	1		
110 002	☐ b. CESW					
UNIT NAME 610.	_	ŀ	MONTHLY TREATMENT 611.	UNIT OF MEASURE 612.		
	C. CA		VOLUME	<u></u>		
Building 25 Electronic Services	🛛 d. PBR		3300	a. Pounds 🛛 b. Gallons		
FTU	🗌 e. CEL					
· · · · · · · · · · · · · · · · · · ·						
SPECIFIC WASTE TYPE TREATED (narrative)				613.		
Aqueous waste and sludge containing meta	ds listed in 22 CCR 66	6261	.24(a)(2).			
				614.		
TREATMENT PROCESS DESCRIPTION (narrative	•			"		
Metals precipitation, pH adjustment, and s				ctornic Services Fixed Treatment		
Unit FTU 002" for a a more detailed descr	iption of the treatment	t pro	cess.			
	of the Thomas and	ı m	Parana Clambiastica anna)			
(NOTE: For each treatment unit, complete and attack	i the appropriate waste and	ı tısı	iment Process Combinations page.)			
II. BASIS F	OR NOT NEEDING	FE	DERAL PERMIT (Check all that a	apply)		
a. The treated waste is not a hazardous waste under federal law (California-only waste). If. Treatment in an accumulation tank or container within 90 days for over 1,000 kg/month generators and 180 or 270 days for generators of 100 to 1,000 kg/month.						
	ks) and discharged to a ering agency or under an		g. Recyclable materials are reclaimed to	recover silver or other precious metals.		
NPDES permit.				em and the April 1		
c. Treatment in elementary neutralization units.			h. Empty container rinsing and/or treatm	nent.		
•				and the second second		
d. Treatment in a totally enclosed treatment facil	ity.		i. Other (specify below)			
e. Federal conditionally exempt small quantity kg., approximately 27 gallons, or less of haza	generator (generated 100 rdous waste in a calendar					
month).						
III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)						
□ a. Discharge non-hazardous aqueous waste to Pe	OTW or sewer.	Res	idual hazardous waste hauled offsite by	a registered hauler. 616.		
			d. Offsite recycling			
☐ b. Discharge non-hazardous aqueous waste unde	er a MPDES permit.	e. Thermal treatment				
			f. Disposal to land			
c. Dispose of non-hazardous solid waste residues at an offsite location.			☑ g. Further treatment			
			h. Other method of disposal (describe below)			
SECONDARY CONTAINMENT INSTALLATION DATE (If required) 1987						
	• •					

Onsite Hazardous Waste Treatment Notification – Unit [(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided the laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 606. UNIT ID NUMBER Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
- 607. UNIT TYPE / TIER Check the appropriate box to indicate unit type under the Tiered Permitting program.
- 608. NUMBER OF TANKS Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
- 609. NUMBER OF CONTAINERS/TREATMENT AREAS Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
- 610. UNIT NAME Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
- 611. MONTHLY TREATMENT VOLUME Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
- 612. UNIT OF MEASURE Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
- 613. SPECIFIC WASTE TYPE TREATED Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
- 614. TREATMENT PROCESS DESCRIPTION Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
- 615. BASIS FOR NOT NEEDING FEDERAL PERMIT Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Ager (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).

- 616. RESIDUALS MANAGEMENT DESCRIPTION Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
- 617. SECONDARY CONTAINMENT INSTALLATION DATE Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM

ONSITE TIERED PERMITTING

PERMIT BY RULE (PBR) PAGE WASTE AND TREATMENT PROCESS COMBINATIONS

1.				<u></u>			(One page per treatment unit. Check all that apply)
			606.			1.	/ı/ı O
U.		D# FTU 002		Facility ID#			Page <u>4</u> of 4 <u>9</u>
1.	☐ a.	both pH and addition of the reducing agen	alent chro it are autoi	mium with sodium bisulfite, sodiu matically controlled.	m metabis		630. l fate, ferrous sulfate, ferrous sulfide or sulfur dioxide provided
2.	2 a. b. c. d. e. f.	Precipitation or crystallization. Phase separation by filtration, centrifugati Ion exchange. Reverse osmosis. Metallic replacement.	ion or grav	vity settlin <u>g</u> .	☐ g. ☐ h. ☐ j. ☐ k. ☐ l.	Plating the metal or Electrodialysis Electrowinning or e Chemical stabilizati Evaporation. Adsorption	ate an electrode. Electrolytic recovery ion using silicates and/or cementitious types of reactions.
3.	824	10 may be treated by the following techno Phase separation by filtration, centrifugati Adsorption. Biological processes conducted in tanks of Photodegradation using ultraviolet light, v Air stripping or steam stripping.	logies:: ion or grav or concine with or wit	rity settling, but excluding super cr rs and utilizing naturally occurring thout the addition of hydrogen per	ritical fluid g microorg oxide or oz	extraction. anisms. cone, provided the tre	volatile organic compounds as measured by EPA Method atment is conducted in an enclosed system.
4.	Slube i a. Market b. C. d.	trented by the following technologies: Chemical stabilization using silicates and	or cement physical	titious types of reactions. properties of the waste such as gri	nding, shre		e 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may ompacting.
5.	Alt a. b.	um, gypsum, lime, sulfur or phosphate slu Chemical stabilization using silicates and Drying to remove water.	udges may /or cemen	be treated by the following tech itious types of reactions.	mologies: □ c.	Phase separation by	y filtration, centrifugation or gravity settling.
No. of the last of	COU a. b.	towing technologies: Chemical stabilization using silicates and	or cemention or grav	titious types of reactions.		or special waste cla	ssification in Section 66261.122 may be treated by the
7.		astes, except ashestos, which have been cl innologies: Chemical stabilization using silicates and Drying to remove water.				Phase separation b	, Section 66261.124, may be treated by the following y filtration, centrifugation or gravity settling. on.
8.	Ind □ a.	organic acid or alkaline wastes may be tr pH adjustment or neutralization.	ested by t	he following technology:			
9.	tec a. b.	chnologies: Chemical stabilization using silicates and Screening to separate components based	l/or cemen on size.	nitious types of reactions.	□ c.	Magnetic separatio	
10). Us a. b. d. d. f.		tion or gra cal propert	vity settling, but excluding super o ties such as size, magnetism or der	ritical flui ısity.	d extraction.	e following technologies:
11	spe an ap □ a	ecified in Title 40 of the Code of Federal d which are not excluded from regulation plicable requirements. Ringing with a suitable liquid capable of	Regulation may be dissolving dissolving dissolving	ns, section 261.7 or inner liners trented by the following technolog or removing the hazardous constituting or puncturing, that change o	removed f igies prov imens wh	rom empty contains ided the treated con ich the container held	er similar absorptive material, which have been emptied as ers that once held bazardous waste or hozardous material stainers and rinseate are managed in compliance with l. he container or inner liner, provided the container or inner liner
ľ	2. Multi-component resins may be treated by the following process: a. Mixing the resin components in accordance with the manufacturer's instructions.						
)		waste stream technology combination ce ermit by Rule. Certified Technology I			tion 2520	0.1.5 of the Health a	nd Safety Code as appropriate for authorization under

Waste and Treatment Process Combinations Form PBR Instructions (Formerly DTSC Form 1772D)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Permit by Rule (PBR) tier. (Note: Reactive and extremely hazardous wastes are not allowed to be treated under this tier.)

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 606. UNIT ID NUMBER Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification Unit form).
- 1. FACILITY ID NUMBER This space is for agency use only.
- 630. WASTE AND TREATMENT PROCESS COMBINATIONS (PBR) -

Use this page only for a PBR unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen	97-01-0024	629/97	CESW	Batch treatment for 10 percent Formalin
	333 East Gardena Blvd. Gardena, CA 90248		(expires 6/29/00)		generated by medical, educational, and laboratory facilities. Chemically treats in a
					provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

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PROCESS DESCRIPTION ELECTRONIC SERVICES FIXED TREATMENT UNIT FTU 002 LBL - BUILDING 25

PhotoFabrication and Silk-Screening facilities, provides a variety of electronic assembly and photo fabrication services for the LBL community. These services include: manufacture of rigid and flexible printed circuit boards, Silk-screening of equipment panels, photo imaging, etching, and electroless metal plating.

The printed circuit board, plating, chemical milling(etching) and silk screening process discharges wastewater into the Fixed Treatment Unit FTU 002 located at Building 25. Also, there are two sinks which are connected to FTU 002. A maximum of 2,500 gallons per month of wastewater from these processes are treated in FTU 002. The chemical rinse water process which discharge directly into FTU 002 include:

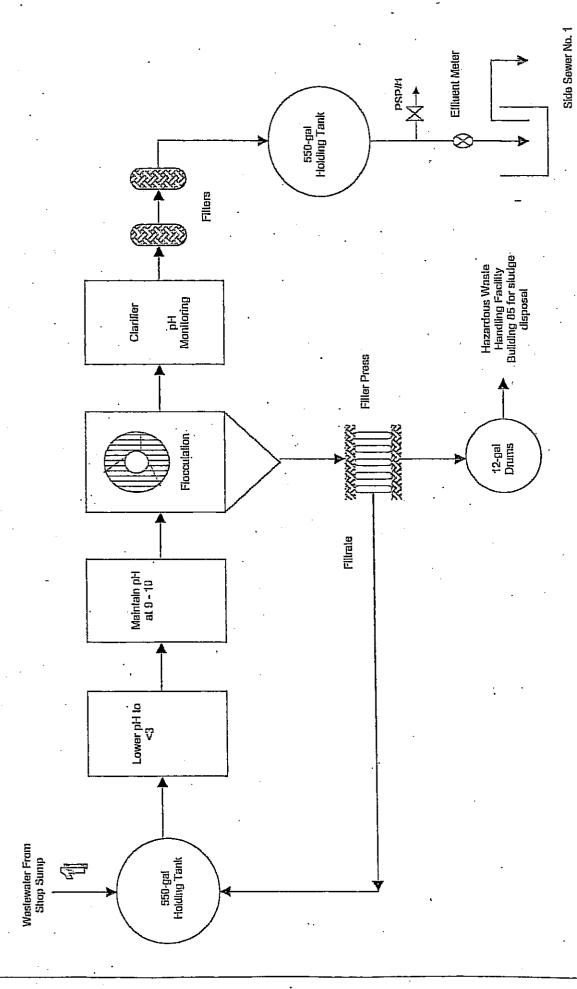
- AFR-2 cleaner, rinse water
- · Micro Etch ND, rinse water
- · Pre-catalyst dip, rinse water
- Deburring machine
- Electroless copper, nickel and gold rinse water
- Riston stripper
- Silk Screen cleaning solutions
- Developing Ulano film

The wastewaters from the above process and sinks flow into a sump. From the sump the wastewater is pumped into a 550-gallon holding tank. The 550-gallon holding tank provides equalization and allows the fixed treatment unit (FTU 002) to be operated on a batch basis (as often as twice per month). Sulfuric acid is added to lower the pH to <3. Ferric chloride is added to help precipitate heavy metals and sodium hydroxide are then added to neutralize the wastewater.

A polyelectrolyte coagulant is added to aid in the flocculation of the metal precipitate in the flocculation chamber. The wastewater is then clarified and filtered.

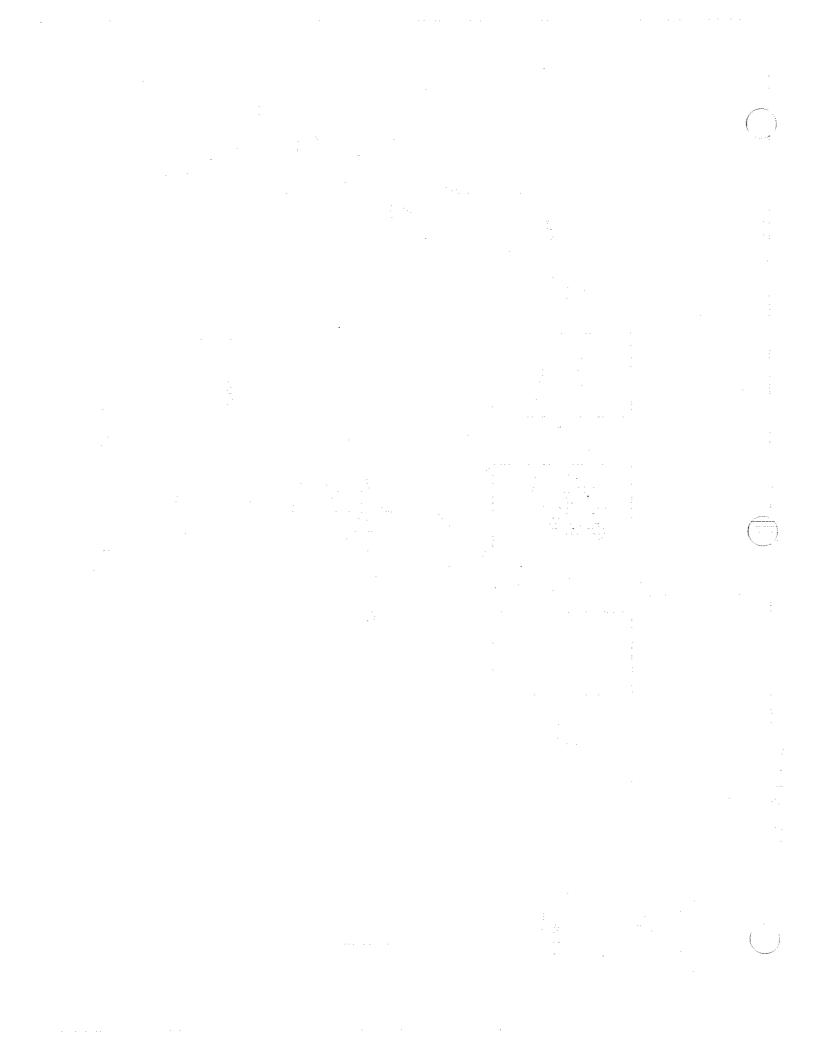
After the treatment process is complete treated rinse water is collected in a 550 gallon holding tank. The treated water in the holding tank is analyzed by a trained personnel. If the results show that the treated water meets in-house standards then the treated water is discharged to the local Publicly Owned Treatment Works (POTW) which is the East Bay Municipal Utility District (EBMUD). If the treated water does not meet in-house standards (approximately one-half of EBMUD's discharge limits) then the water is passed through the treatment process a second time.

This treatment process generates a sludge which contains metals. The sludge is dewatered in a filter press. The filter cake, a residual hazardous waste, typically contains copper, lead, nickel, and zinc. The filter cake is collected in a 12-gallon drum for transportation off-site by a registered hazardous waste hauler.



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Building 25 FTU 002 Wastewater Treatment Process



EPA ID Number: CA4890008986



TRC Environmental Corporation
1201 North McDowell Boulevard
Petaluma, CA 94954

\$\approx\$ (707) 769-5250 Fax (707) 762-3614

June 29, 1993

University of California
Lawrence Berkeley Laboratory for the U.S. Department of Energy
Environmental Protection Group
Building B75B
Berkeley, California 94720

Attention:

Mr. Robert Fox

Tank Certification Report for Building 25 - FTU 002. EPA ID Number: CA 4890008986

Dear Mr. Fox,

An inspection of the Waste Treatment Tank (Building 25) and associated plumbing and containment structures has been conducted by TRC Environmental Corporation on several occasions between February 25, 1993 and June 29, 1993. The tanks, piping systems, containment systems, pumps, and other control devices were observed.

Based on these inspections, a review of available drawings and design information, and subsequent calculations, the following certification is made. Because the tank was in operation prior to July 14, 1986, this certification is being made pursuant to CCR Section 66265,191, - "Assessment of Existing Tank System's Integrity."

Title 22, Code of California Regulations (CCR): Section 66264.191(a) Tank System Integrity

Based upon visual observations of the base metal during coating/preparation operations, observations made during the coating operations, coating thickness tests after application of the new coating, and a static water level test, the treatment tank has sufficient integrity to contain the materials to be treated in the tank.

Section 66265.191(b)(1) Design Standards

Appears to meet regulatory requirements per visual inspection and limited design document review.

University of California Lawrence Berkeley Laboratory for the U.S. Department of Energy Mr. Robert Fox March 26, 1993 Page 2

Section 66265.191(b)(2) Hazardous Characteristics of Waste

The systems is compatible with the intended wastes from the plating and circuit board manufacturing operations in the adjacent building 25. A review of the coating manufacturers specifications indicate that the coating is compatible with the wastes intended for treatment.

Section 66265.191(b)(3) Corrosion Protection

Appears to meet regulatory requirements per visual inspection and limited design document review. Inspections were also performed during tank coating operations. The base metal appeared to have integrity and a review of the manufacturers coating specifications indicate that the coating should provide very good to excellent corrosion protection for the materials to be treated in the tank.

Section 66265.191(b)(4) Age of Tank System

Based upon discussions with laboratory personal and a review of construction documents, the tank was installed during March, 1986.

Section 66265.191(b)(5) Leak Test and Inspection Results

Based upon visual observations of the base metal during coating/preparation operations, observations made during the coating operations, coating thickness tests after application of the new coating, and a static water level test, the treatment tank has sufficient integrity to contain the materials to be treated in the tank. Visual observations included an inspection for the following items:

- weld breaks;
- (2) punctures;
- scrapes of protective coatings;
- (4) cracks;
- (5) corrosion;
- (6) other structural damage or inadequate construction or installation.

During inspections and the static water level test the tank appeared to meet regulatory requirements.

Based on my personal observations and review of supporting materials provided to me by staff at LBL, I attest that the system has sufficient structural integrity, is acceptable for the transferring, storing, and treating of hazardous waste, and that the tanks are suitably designed to achieve the requirements of Article 10, Title 22, CCR.

Page 9 of 49

EPA ID Number: CA4890008986

University of California
Lawrence Berkeley Laboratory for the U.S. Department of Energy
Mr. Robert Fox
March 26, 1993
Page 3

I certify under penalty of law that this document was prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

TRC Environmental Corporation

Robert M. Boggs, P.E. Senior Chemical Engineer

Registered Professional Engineer California Certificate No. CH 4625

13821015.001

UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

		One page and attachments per unit				
	· ·	Page 10 of 49				
FACILITY ID#		BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)				
		Lawrence Berkeley National Laboratory				
I. TREATMENT UNIT						
UNIT ID# 606. UNIT TY	PE/TIER	607. NUMBER OF TANKS 608. NUMBER OF CONTAINERS/ 60 TREATMENT AREAS				
FTU 003	ESQT	5 0				
□ Ь. С	ESW					
UNIT NAME 610.	2A	MONTHLY TREATMENT 611. UNIT OF MEASURE 61 VOLUME				
Building 76	BR	5,600 □ a. Pounds ⋈ b. Gallons				
□ e. C	CEL					
		61				
SPECIFIC WASTE TYPE TREATED (narrative)	1					
Oil mixed with water is generated from washing ca	rs, trucks, and	u puses.				
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
TREATMENT PROCESS DESCRIPTION (narrative)	* •	61				
Phase separation by gravity settling.	e e e e	ing dia kalang dia kabupatèn dia kabupatèn dia kabupatèn dia kabupatèn dia kabupatèn dia kabupatèn dia kabupat Kabupatèn dia kabupatèn di				
	• .	the second control of the second control of				
(NOTE: For each treatment unit, complete and attach the appro	priate Waste and	d Treatment Process Combinations page.)				
II. BASIS FOR NO	r needing	FEDERAL PERMIT (Check all that apply)				
☑ a. The treated waste is not a hazardous waste unde (California-only waste).		f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.				
	ischarged to a ey or under an	g. Recyclable materials are reclaimed to recover silver or other precious metals.				
c. Treatment in elementary neutralization units.		☐ h. Empty container rinsing and/or treatment.				
d. Treatment in a totally enclosed treatment facility.		☐ i. Other (specify below)				
e. Federal conditionally exempt small quantity generator kg., approximately 27 gallons, or less of hazardous was	(generated 100 te in a calendar					
month).	MANAGEM	ENT DESCRIPTION (Check all that apply)				
		Residual hazardous waste hauled offsite by a registered hauler.				
■ a. Discharge non-hazardous aqueous waste to POTW or se	wer.					
☐ b. Discharge non-hazardous aqueous waste under a NPDE	S permit.	☐ d. Offsite recycling ☐ e. Thermal treatment				
		☑ f. Disposal to land				
☐ c. Dispose of non-hazardous solid waste residues at an offe	site location.	☑ g. Further treatment				
		☐ þ. Other method of disposal (describe below)				
SECONDARY CONTAINMENT INSTALLATION DATE (I	frequired) 1991					

Onsite Hazardous Waste Treatment Notification – Unit [(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page freach treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided to laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 606. UNIT ID NUMBER Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
- 607. UNIT TYPE / TIER Check the appropriate box to indicate unit type under the Tiered Permitting program.
- 608. NUMBER OF TANKS Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
- 609. NUMBER OF CONTAINERS/TREATMENT AREAS Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
- 610. UNIT NAME Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
- 611. MONTHLY TREATMENT VOLUME Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
- 612. UNIT OF MEASURE Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
- 613. SPECIFIC WASTE TYPE TREATED Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
- 614. TREATMENT PROCESS DESCRIPTION Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
- 615. BASIS FOR NOT NEEDING FEDERAL PERMIT Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Ager (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).

- 616. RESIDUALS MANAGEMENT DESCRIPTION Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
- 617. SECONDARY CONTAINMENT INSTALLATION DATE Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM

ONSITE TIERED PERMITTING

CONDITIONALLY AUTHORIZED (CA) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

					(One page per treatment unit. Check all that apply)
		506.		1.	Page 11 of 49
UNIT ID#	FTU 003	Facility ID#			Page 11 01 15 629.
1,400 pp	om total of these constituents. (There is a use separation, including precipitation, by file exchange, including metallic replacement, verse osmosis. sorption. adjustment of aqueous waste with a pH of	to volume limit for this wastestream.) To litration, centrifugation, or gravity settling, between 2.0 and 12.5. ions contain hydrochloric acid. to hexavalent chromium, to trivalent circ	reatment including omium w	using: the use of demulsi	66261,24(a)(1)(B) or (a)(2)(A) and which contain less than
constitu □ a. Ph	s wastes, <u>hazardous solely due to</u> organi tents. (There is no volume limit for this v ase separation by filtration, centrifugation, c sorption.	vastestream.) Treatment using:			· (2)(B) and which contain less than 750 ppm total of these
listed in this uni a. Ph	a Title 22, CCR, Section 66261.24(a)(1)(E t does not exceed 5,000 gallons or 45,000 ysical processes which constitute treatment ishing, or compacting, ying to remove water, paration based on differences in physical pr	 or (a)(2)(A) and which, for dusts only, pounds. Treatment using: only because they change the physical properties, such a size, magnetism, or density 	contain operties o	less than 750 ppn	solely due to the presence of constituents, except asbestos, total of these constituents. The monthly volume treated in s filtration, centrifugation, gravity settling, grinding, shredding,
	rypsum, lime, sulfur, or phosphate sludge ying to remove water.	s. The monthly volume treated in this u	nit does i	not exceed 5,000 g Phase separation by	allons or 45,000 pounds. Treatment using: filtration, ceatrifugation, or gravity settling.
asbesto unit do a. Dr b. Ph	wastes listed in Title 22, CCR, Section 6, listed in Title 22, CCR, Section 66261 es not exceed 5,000 gallons or 45,000 pou ying to remove water. ase separation by filtration, centrifugation, reening to separate components based on si paration based on differences in physical paration.	24(a)(1)(B) or (a)(2)(A) and which cont nds. Treatment using: or gravity settling. ze.	ain less t	t, Section 66261.1 han 750 ppm tota	22 which is <u>hazardous solely due to</u> the constituents, except I of these constituents. The monthly volume treated in this
Title 22 5,000 g □ a. Di	wastes classified under Title 22, CCR, 5 2, CCR, Section 66261.24(a)(1)(B) or (a)(allons or 45,000 pounds. Treatment usin ying to remove water. ase separation by filtration, centrifugation,	2)(A) and which contain less than 750 ppg:	om total (os, which is <u>hazar</u> of these constituer Magnetic separatio	dous solely due to the constituents, except asbestos, listed in its. The monthly volume treated in this unit does not exceed n.
		, CCR, Section 66261.24(a)(2)(A). The r	nonthly v	olume treated in	his unit does not exceed 5,000 gallons or 45,000 pounds.
	ient using: reening to separate components based on si	ze.	□ ъ.	Magnetic separation	л. · · · ·
under ti a. Pt m b. Se	he CEL category.)	or gravity settling, but excluding super cri	ical fluid		ent using: (NOTE: Some used oil/water separation is allowed og the use of demulsifiers and flocculants. Heat can be used, but
volume	lization of acidic or alkaline wastes, hazz limit for this wastestream.) ne waste contains less than 10 percent acid ne waste contains 10 percent or more acid o	or base constituents by weight. There is no	volume !	limit for this catego	stic material, in elementary neutralization units. (There is no ary. d 500 gailous at one time.
10. Not in	use/exempted — formerly recovery of sil	ver from photolinishing.			
is no lo	use/sunsetted — formerly treatment of s onger allowed under Conditional Author olume treated is less than 55 gallons per a	ization as of January 1, 1998. Treatmer	it of this	wastestream now	opper or copper compounds. Treatment of this wastestream requires authorization under either Permit by Rule or, if the
Condi	ional Authorization.	ied by the Department pursuant to Sec i Technology Number:			th and Safety Code as appropriate for authorization under
	Certifier	r reemiology rumber.			

Waste and Treatment Process Combinations Form CA Instructions (Formerly DTSC Form 1772C)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Conditionally Authorized (CA) tier. [Note: 1.) Reactive and extremely hazardous wastes are not allowed to be treated under this tier; 2.) Except for dilute aqueous waste and oily waste, volume of hazardous waste treated must not exceed 5,000 gallons (45,000 pounds) per month.]

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 606. UNIT ID NUMBER Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification Unit form).
- 1. FACILITY ID NUMBER This space is for agency use only.
- 629. WASTE AND TREATMENT PROCESS COMBINATIONS (CA) -

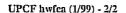
Use this page only for a CA unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen	97-01-0024	629/97	CESW	Batch treatment for 10 percent Formalin
	333 East Gardena Blvd.		(expires 6/29/00)		generated by medical, educational, and
	Gardena, CA 90248				laboratory facilities. Chemically treats in a
					provided 8 liter vessel. After testing, allows
	<u> </u>				for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modern at (916) 322-5041.



UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

	(One page and attachments per unit)					
	Page <u>12</u> of 49					
FACILITY ID#	BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3.					
	Lawrence Berkeley National Laboratory					
I. TREATMENT UNIT						
UNIT ID# 606. UNIT TYPE/TIER	607. NUMBER OF TANKS 608. NUMBER OF CONTAINERS/ 609. TREATMENT AREAS					
FTU 004 a. CESQT	6 0					
□ b. CESW						
UNIT NAME 610. 🔀 c. CA	MONTHLY TREATMENT 611. UNIT OF MEASURE 612.					
Building 70A and 70F FTU	160,000 □ a. Pounds ☒ b. Gallons					
□ e. CEL						
SPECIFIC WASTE TYPE TREATED (narrative)	613.					
Acidic wastes are generated in various laboratories in Building	70A. Acids that are discharged include: hydrochloric acid, phosphoric					
	omplete listing is found in the attachment, "Waste Stream Survey,					
Building 70A Waste Treatment System."						
TREATMENT PROCESS DESCRIPTION (narrative)	614.					
Neutralization of acidic wastes by elementry neutralization with	n sodium hydroxide.					
	and the first of the state of t					
(NOTE: For each treatment unit, complete and attach the appropriate Waste an	d Treatment Process Combinations page.)					
II. BASIS FOR NOT NEEDING	G FEDERAL PERMIT (Check all that apply)					
a. The treated waste is not a hazardous waste under federal law (California-only waste).	f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.					
D. Treated in waste water treatment units (tanks) and discharged to a publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.	☐ g. Recyclable materials are reclaimed to recover silver or other precious metals.					
□	☐ h. Empty container rinsing and/or treatment.					
d. Treatment in a totally enclosed treatment facility.	i. Other (specify below)					
e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month).						
III. RESIDUALS MANAGEMENT DESCRIPTION (Check all that apply)						
	Residual hazardous waste hauled offsite by a registered hauler. 616.					
b. Discharge non-hazardous aqueous waste under a NPDES permit.	d. Offsite recycling					
LI b. Discharge don-nazardons adueous waste under a MEDES permit.	e. Thermal treatment					
☐ c. Dispose of non-hazardous solid waste residues at an offsite location.	f. Disposal to land					
	g. Further treatment					
☐ h. Other method of disposal (describe below)						
SECONDARY CONTAINMENT INSTALLATION DATE (If required) 1991	2 617.					

Onsite Hazardous Waste Treatment Notification – Unit [(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page freach treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided to laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 606. UNIT ID NUMBER Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
- 607. UNIT TYPE / TIER Check the appropriate box to indicate unit type under the Tiered Permitting program.
- 608. NUMBER OF TANKS Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
- 609. NUMBER OF CONTAINERS/TREATMENT AREAS Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
- 610. UNIT NAME Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
- 611. MONTHLY TREATMENT VOLUME Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
- 612. UNIT OF MEASURE Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
- 613. SPECIFIC WASTE TYPE TREATED Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
- 614. TREATMENT PROCESS DESCRIPTION Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
- 615. BASIS FOR NOT NEEDING FEDERAL PERMIT Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agen (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).

- 616. RESIDUALS MANAGEMENT DESCRIPTION Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
- 617. SECONDARY CONTAINMENT INSTALLATION DATE Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM

ONSITE TIERED PERMITTING

CONDITIONALLY AUTHORIZED (CA) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

			(One page per treatment unit. Check all that apply)
-	606.	1.	10 /0
U	NIT ID# FTU 004	Facility ID#	Page 13 of 49
	1,400 ppm total of these constituents. (There is no vol a. Phase separation, including precipitation, by filtration b. Ion exchange, including metallic replacement. c. Reverse osmosis. d. Adsorption. pH adjustment of aqueous waste with a pH of between the constitution of solutions, unless those solutions. g. Reduction of solutions hazardous solely due to he	on, centrifugation, or gravity settling, including the use of demulsi een 2.0 and 12.5.	ifiers and flocculants.
	constituents. (There is no volume limit for this waster	sstituents listed in Title 22, CCR, Section 66261,24(a)(1)(B) or stream.) Treatment using: vity settling, but excluding super critical fluid extraction.	r (2)(B) and which contain less than 750 ppm total of these
	listed in Title 22, CCR, Section 66261.24(a)(1)(B) or this unit does not exceed 5.000 vallons or 45.000 noun	because they change the physical properties of the waste, such a	a total of these constituents. The monthly volume treated in
4.	Alum, gypsum, lime, sulfur, or phosphate sludges. To a. Drying to remove water.	the monthly volume treated in this unit does not exceed 5,000 g \Box b. Phase separation by	allons or 45,000 pounds. Treatment using: y filuation, centrifugation, or gravity settling.
	Special wastes listed in Title 22, CCR, Section 66261 asbestos, listed in Title 22, CCR, Section 66261.24(a) unit does not exceed 5,000 gallons or 45,000 pounds. a. Drying to remove water. b. Phase separation by filtration, centrifugation, or grace. Screening to separate components based on size. d. Separation based on differences in physical propert	vity settling.	il of these constituents. The monthly volume treated in this
	Special wastes classified under Title 22, CCR, Section Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) 5,800 gallons or 45,000 pounds. Treatment using: a. Drying to remove water. b. Phase separation by filtration, centrifugation, or gra	n 66261.124 as special wastes, except asbestos, which is <u>hazar</u> and which contain less than 750 ppm total of these constituen □ c. Magnetic separation with settling.	ats. The monthly volume treated in this unit does not exceed
7.	Soils contaminated with metals listed in Title 22, CCI Treatment using: a. Screening to separate components based on size.	R, Section 66261.24(a)(2)(A). The monthly volume treated in t	
	under the CEL category.)	es. (There is no volume limit for this wastestream.) Treatmentity settling, but excluding super critical fluid extraction, including ies, such a size, magnetism, or density.	
	volume limit for this wastestream.) a. The waste comains less than 10 percent acid or bas	es solely due to corrosivity, or toxic only from the acid or cause constituents by weight. There is no volume limit for this catego constituents by weight and is treated in batches that do not excee	ory.
10.	Not in use/exempted — formerly recovery of silver for	om photofinishing.	
11.	is no longer allowed under Conditional Authorizatio	cleaners and conditioners which are hazardous solely due to c n as of January 1, 1998. Treatment of this wastestream now n, under Conditionally Exempt Small Quantity Treatment.	copper or copper compounds. Treatment of this wastestream requires authorization under either Permit by Rule or, if the
	Conditional Authorization.	y the Department pursuant to Section 25200.1.5 of the Heal	

Waste and Treatment Process Combinations Form CA Instructions (Formerly DTSC Form 1772C)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Conditionally Authorized (CA) tier. [Note: 1.) Reactive and extremely hazardous wastes are not allowed to be treated under this tier; 2.) Except for dilute aqueous waste and oily waste, volume of hazardous waste treated must not exceed 5,000 gallons (45,000 pounds) per month.]

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 606. UNIT ID NUMBER Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification Unit form).
- 1. FACILITY ID NUMBER This space is for agency use only.
- 629. WASTE AND TREATMENT PROCESS COMBINATIONS (CA) -

Use this page only for a CA unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen	97-01-0024	629/97	CESW	Batch treatment for 10 percent Formalin
	333 East Gardena Blvd.		(expires 6/29/00)		generated by medical, educational, and
	Gardena, CA 90248		,		laboratory facilities. Chemically treats in a
					provided 8 liter vessel. After testing, allows
					for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

UPCF hwfca (1/99) - 2/2 http://www.unidocs.org Rev. 05/08/00

WASTE STREAM SURVEY BUILDING 70A WASTE TREATMENT SYSTËM

	•		
Continuous or Batch	Barch	Butch for processing and replenishing; leakage in lines is continuous to ensure no growth of algae	Batch
Frequency of discharge	l discharge per week averaged over the year	Normal processing: maximum of twice a day at some work stations Batch replenishing; once a week at most for most baths	Acid is normally recycled. Acid bath may have to be dumped 6-8 times a year
Yolume of discharge	Oenerally 100 ml for acid/peroxide or ammonium mixtures	Normal processing; small amounts of acids liatch replenishing; 1 to 5 gallons of various mixtures Leakage in lines; 1400 gallons per day of ultrapure	Varies; estimated 1-3 gallons of acid; volume of water used to rinse columns up to 200 gallons
Concentration of chemicals in discharge (max.)	HF; 9%; H2SO4; 81%; HC!: 10%; NH ₄ F: 36%; H2O2: 6%; HNO ₃ : 67%; H ₃ PO4: 83%; NH ₄ OH: 39% ucelle aeld: 26%	HP; 7% H2O2; 1% H2SO4; 80% NH4P; 34% HC! 2% HNO3; 36% HNO4; 36% HRO4; 70% Commercial developers	FIF: 3% For mixture: FINO3: 18%, FIF: 6%
Chemicals in waste discharge	HF, H2SO4, HC1, NR4,F, H2O2, FINO3, H3PO4, NR4OH, acetic acid	HF, H2O2, NH4F, H2SO4, HCI, HNO3, H3PO4, NnOH, acelic held, HBF4; commercial developers	HF or HNO3/HP mixture
Chemicals used in process	HF, H ₂ SO4, HCl, NH ₄ F, H ₂ O ₂ , HNO ₂ , H ₂ PO ₄ , NH ₄ OH, accilc acid, methanol, isopropanol; other solvents	HF, H2O2, NF4,F, H2SO4, HC1, HNO3, H3PO4, NaOH, accle acid, HBF4; commercial developers*	HF or HNO ₃ /HF mixture
Description of Process	Etching of silicon and germanium wafers,	Eiching and cleaning of silicon and germanium wafers; oxidation of wafers in high-temperature furnace	Cleaning of quartz pieces and columns
Room	3318, 3318B	4445	4-157

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• Commercial developers contain sodium phosphate, sodium metasilicate, sodium hydroxide (15%), sodium borate and tetramethylammentum hydroxide(<1%).

Also, see "Classification of Hydrolluoric Acid Mixtures"

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WASTE STREAM SURVEY BUILDING 70A WASTE TREATMENT SYSTEM

Continuous or batch	1. Batch		2. Batch	3. Batch
Frequency of discharge	1	twice per year	2. 2 discharges/week	3. 1 discharge/month
Volume of discharge	1. 12 liters		2. 5 liters	3. < 1 liters
Concentration of chemicals in	1. HCl: 1 N		1. HC! 10% 2. HNO3 10%	3. HCl < 1%
Chemicals in waste discharge	1. HCl,		I. HCI, HNO3	3. HCI
Chemicals used in process	I. HCI		1. HCl, HN03	3. HCl
Description of process	1. Leaching Filter	material to remove trace metals.	2.cleaning plastic/glassware for trace metal	work 3. leaches of ocean particles
Room	4405			•

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WASTE STREAM SURVEY BUILDING 70A WASTE TREATMENT SYSTEM

Continuous or batch	1. Batch	2A. Batch 2B. Batch	
Frequency of discharge	1. 1 discharge/week	2A. 4 discharges/year 2B. 4 discharges/year	
Volume of discharge	1. 4 liters	2A. 0.5 liters 2B. 1 liter	
Concentration of chemicals in discharge (max.)	1. H ₃ PO ₄ : < 0.4%	2A. H ₃ PO ₄ : 2% 2B. H ₃ PO ₄ : 5%	
Chemicals in waste discharge	1. Н ₃ РО4	2A. H ₃ PO ₄ 2B. H ₃ PO ₄	
Chemicals used in process	1. H ₃ PO ₄	2A. H ₃ PO ₄ 2B. H ₃ PO ₄	
Description of process	1.Phosphoric acid (H ₃ PO ₄) is added to groundwater samples to lower the pH and convert all dissolved inorganic carbon compounds in the sample to carbon dioxide which is analyzed on the mass	2. Phosphoric acid is used to dissolve solid carbonates to generate carbon dioxide for isotope analyses. An automated process	(2A) or a manual process (2B) is utilized. (ref. Mark Conrad 11/20/06 e-mail.)
Коот			

WASTE STREAM SURVEY BUILDING 70A WASTE TREATMENT SYSTEM

is or		•													
Continuous or batch		I. Batch			2. Batch			;	3. Batch			4. Batch	1	5. Batch	
Frequency of discharge		1. 3 discharges/week			2. 5 discharges/week				3. 1 discharge/week		;	4. 3 discharges/year		5. 2 discharges/year	
Volume of discharge		1. 7 liters			2. 24 liters			:	3. 10 liters			4. 4 liters		5. I liter	
Concentration of chemicals in	discharge (max.)	I. HCl: 18%	H2O2: 0.2%		2. HF: 1.1%	HNO3: 1.1%			3. HClO4: ≤ 0.01%			4. H3PO4: 33%		5. CH3COOH: 5%	
Chemicals in waste discharge		1. HCI, H202			2. HF, HNO3				3. HCI04			4. H3PO4		5. CH3COOH	
Chemicals used in process		1. HCl, H202			2. HF, HN03				3. HCl04			4. H3PO4		5. CH3COOH	
Description of process	•	1. Leaching rock	samples in HCL	& H2O2	2. Ouartz isolation	w/ultrasonic	cleaner, HF,	HNO3.	3. HCLO4	fumehood water	filter.	4. Oxygen isotope	analysis.	5. Washing rock	samples.
Room		4419	4429	_											

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CLASSIFICATION OF HYDROFLUORIC ACID MIXTURES

BACKGROUND:

On December 17, 1993, Mr. David McGraw, Director of Environment, Health & Safety Division at Lawrence Berkeley Laboratory, requested a determination on whether dilute solutions of hydrofluoric acid are considered extremely hazardous wastes from Mr. James Strock, Director of California Environmental Protection Agency. (DIR93-151). Mr. Strock routed the letter to Mr. Ronald Pilorin, Chief of the Waste Evaluation Unit, Cal-EPA. Mr. Pilorin responded to Mr. McGraw on January 20, 1993.

In Mr. Pilorin's letter he noted,

"As you are well aware, there are no identified or approved testing methods to determine whether a waste which contains a water reactive substance such as hydrofluoric ... acid would be considered to be water reactive." He further states, "Section 66262.11, 22 CCR, states that a 'generator may determine that the waste from his particular facility or operation is not a hazardous waste [or an extremely hazardous waste, R.P.] by either: (1) testing the waste,...; or (2) applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used and the [hazardous waste or extremely hazardous waste, R.P.] characteristics,....' In absence of test methods identified within the extremely hazardous waste criteria, ANY test methods or assessment techniques can be used to satisfy the requirement for knowledge about the waste. Any other source of information may be used for this purpose as well. Unfortunately, at this time the Department does not have the staff or resources to immediately develop a specific test method." (emphasis added)

KNOWLEDGE OF THE WASTE:

From a survey of the users of the fixed treatment unit at building 70A (FTU 004) it has been determined that the highest percent of hydrofluoric acid, at the point of generation, is under 10% hydrofluoric acid. Typically, the hydrofluoric acid volume is 500 milliliters or less.

A report prepared by a certified professional chemical engineer at Sampson Engineering Associates (SAE) entitled, "Hydrofluoric Acid Hazardous/Extremely Hazardous Waste Classification", concludes that, "...liquids containing HF [hydrofluoric acid] at less than 38.2 weight percent concentration (it may be possible to demonstrate this conclusion for 47 weight percent solutions [SAE]) should be regulated as hazardous, not extremely hazardous."

Our past experience with solutions of less than 10% hydrofluoric acid also show that these solutions are not water reactive and therefore do not meet extremely hazardous waste criteria.

CONCLUSION:

Solutions of hydrofluoric acid less than 38.2% hydrofluoric acid are not extremely hazardous. These waste solutions will be managed as a hazardous waste.

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UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

· · · · · · · · · · · · · · · · · · ·	(One page and attachments per unit)
	Page 19 of 49
FACILITY ID#	BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) 3. 3.
	Lawrence Berkeley National Laboratory
I. TREAT	TMENT UNIT
UNIT ID# 606. UNIT TYPE/TIER	607. NUMBER OF TANKS 608. NUMBER OF CONTAINERS/ 609. TREATMENT AREAS
FTU 005	5 0
b. CESW	
UNIT NAME 610.	MONTHLY TREATMENT 611. UNIT OF MEASURE 612. VOLUME
Building 2 d. PBR	25,000 □ a. Pounds ⋈ b. Gallons
□ e. CEL	
SPECIFIC WASTE TYPE TREATED (narrative)	613.
Acidic wastes are generated in various laboratories in Building 2	. Acids that are discharged include: hydrochloric acid, phosphoric
acid, sulfuric acid, acetic acid, nitric acid, and other acids. A cor	mplete listing is found in the attachment, "Building 2 Fixed Treatment
Unit Waste Steam Survey."	
TREATMENT PROCESS DESCRIPTION (narrative)	614.
	andium hydroxida
Neutralization of acidic wastes by elementry neutralization with	sodialit llyatoxide.
(NOTE: For each treatment unit, complete and attach the appropriate Waste and	Treatment Process Combinations page.)
II. BASIS FOR NOT NEEDING	FEDERAL PERMIT (Check all that apply)
a. The treated waste is not a hazardous waste under federal law (California-only waste).	f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.
⊠ b. Treated in waste water treatment units (tanks) and discharged to a	g. Recyclable materials are reclaimed to recover silver or other precious metals.
publicly owned treatment works (POTW)/sewering agency or under an NPDES permit.	g. Recyclable materials are reclaimed to recover silver of other precious metals.
	☐ h. Empty container rinsing and/or treatment.
☑ c. Treatment in elementary neutralization units.	ii. Limply container mising moon deathern.
d. Treatment in a totally enclosed treatment facility.	i. Other (specify below)
e. Federal conditionally exempt small quantity generator (generated 100	
kg., approximately 27 gallons, or less of hazardous waste in a calendar month).	
III. RESIDUALS MANAGEME	ENT DESCRIPTION (Check all that apply)
□ a. Discharge non-hazardous aqueous waste to POTW or sewer.	Residual hazardous waste hauled offsite by a registered hauler. 616.
EA # Discussion for imparages adapted transfer to the state of south	
b. Discharge non-hazardous aqueous waste under a NPDES permit.	d. Offsite recycling
	e. Thermal treatment
☐ c. Dispose of non-hazardous solid waste residues at an offsite location.	f. Disposal to land
	g. Further treatment h. Other method of disposal (describe below)
	L. p. Other memor or insposar (describe below)
¿CONDARY CONTAINMENT INSTALLATION DATE (If required) 1998	617.

Onsite Hazardous Waste Treatment Notification – Unit [(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page freach treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided the laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 606. UNIT ID NUMBER Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
- 607. UNIT TYPE / TIER Check the appropriate box to indicate unit type under the Tiered Permitting program.
- 608. NUMBER OF TANKS Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
- 609. NUMBER OF CONTAINERS/TREATMENT AREAS Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
- 610. UNIT NAME Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
- 611. MONTHLY TREATMENT VOLUME Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
- 612. UNIT OF MEASURE Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
- 613. SPECIFIC WASTE TYPE TREATED Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
- 614. TREATMENT PROCESS DESCRIPTION Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
- 615. BASIS FOR NOT NEEDING FEDERAL PERMIT Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agen (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).

- 616. RESIDUALS MANAGEMENT DESCRIPTION Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
- 617. SECONDARY CONTAINMENT INSTALLATION DATE Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM

ONSITE TIERED PERMITTING

CONDITIONALLY AUTHORIZED (CA) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

				(One page per freatment unit. Check all that apply)
UN	IT ID# FTU 005	Facility ID#		Page <u>20</u> of <u>49</u>
	1,400 ppm total of these constituents. (There a. Phase separation, including precipitation, b. Ion exchange, including metallic replacem c. Reverse osmosis. d. Adsorption. e. pH adjustment of aqueous waste with a pH f. Electrowinning of solutions, unless those	e is no volume limit for this wastestrea by filtration, centrifugation, or gravity so tent. I of between 2.0 and 12.5. solutions contain hydrochloric acid. due to bexavalent chromium, to trival	m.) Treatment using: entling, including the use of de ent chromium with sodium b	isulfite, sodium metabisulfite, sodium thiosulfate, ferrous chloride,
	Aqueous wastes, <u>hazardous solely due to</u> or constituents. (There is no volume limit for the land of th	nis wastestream.) Treatment using:		(B) or (2)(B) and which contain less than 750 ppm total of these
	listed in Title 22, CCR, Section 66261.24(a)(1)(B) or (a)(2)(A) and which, for dust 000 pounds. Treatment using: nent only because they change the phys	s only, contain less than 750 ical properties of the waste, s	rdous solely due to the presence of constituents, except asbestos, ppm total of these constituents. The monthly volume treated in such as filtration, centrifugation, gravity settling, grinding, shredding,
4. E	Alum, gypsum, lime, sulfur, or phosphate sli a. Drying to remove water.	udges. The monthly volume treated in	this unit does not exceed 5,0	000 gallons or 45,000 pounds. Treatment using: on by filtration, centrifugation, or gravity settling.
	Special wastes listed in Title 22, CCR, Section selections, listed in Title 22, CCR, Section 66 unit does not exceed 5,000 gallons or 45,000 a. Drying to remove water. b. Phase separation by filtration, centrifugation. Screening to separate components based of Separation based on differences in physical components.	261.24(a)(1)(B) or (n)(2)(A) and whic pounds. Treatment using: on, or gravity settling. on size.	h contain less than 750 ppm	261.122 which is <u>hazardous solely due to</u> the constituents, except total of these constituents. The monthly volume treated in this
	Special wastes classified under Title 22, CC Title 22, CCR, Section 66261.24(a)(1)(B) or 5,000 gallons or 45,000 pounds. Treatment a. Drying to remove water. b. Phase separation by filtration, centrifugation.	(a)(2)(A) and which contain less than using:	s, except asbestos, which is <u>1</u> 750 ppm total of these const	nazardous solely due to the constituents, except asbestos, listed in ituents. The monthly volume treated in this unit does not exceed eration.
7.	Soils contaminated with metals listed in Titl Treatment using:] a. Screening to separate components based of		The monthly volume treate	d in this unit does not exceed 5,000 gallons or 45,000 pounds. aration.
[under the CEL category.)	ion, or gravity settling, but excluding su	per critical fluid extraction, in	eatment using: (NOTE: Some used oil/water separation is allowed cluding the use of demulsifiers and flocculants. Heat can be used, but
	Neutralization of acidic or alkaline wastes, volume limit for this wastestream.) a. The waste contains less than 10 percent a b. The waste contains 10 percent or more ac	cid or base constituents by weight. The	e is no volume limit for this c	caustic material, in elementary neutralization units. (There is no ategory. exceed 500 gallons at one time.
10.	Not in use/exempted — formerly recovery o	f silver from photofinishing.		
11.	Not in use/sunsetted — formerly treatment is no longer allowed under Conditional Aut total volume treated is less than 55 gallons g	horization as of January 1, 1998. Tre	atment of this wastestream	e to copper or copper compounds. Treatment of this wastestream now requires authorization under either Permit by Rule or, if the it.
	Conditional Authorization.	ertified by the Department pursuant Fied Technology Number: _	to Section 25200.1.5 of the	Health and Safety Code as appropriate for authorization under

Waste and Treatment Process Combinations Form CA Instructions (Formerly DTSC Form 1772C)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Conditionally Authorized (CA) tier. [Note: 1.) Reactive and extremely hazardous wastes are not allowed to be treated under this tier; 2.) Except for dilute aqueous waste and oily waste, volume of hazardous waste treated must not exceed 5,000 gallons (45,000 pounds) per month.]

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 606. UNIT ID NUMBER Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification Unit form).
- 1. FACILITY ID NUMBER This space is for agency use only.
- 629. WASTE AND TREATMENT PROCESS COMBINATIONS (CA) -

Use this page only for a CA unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen	97-01-0024	629/97	CESW	Batch treatment for 10 percent Formalin
	333 East Gardena Blvd.		(expires 6/29/00)		generated by medical, educational, and
	Gardena, CA 90248			ì.	laboratory facilities. Chemically treats in a
					provided 8 liter vessel. After testing, allows
					for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

UPCF hwfca (1/99) - 2/2 http://www.unidoes.org Rev. 05/08/00

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CA	
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EPA	

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Page $\frac{21}{2}$

Building 2 Fixed Treatment Unit Waste Stream Survey

Snoi	ch									
Continuous	or Batch	Batch	Batch	Batch	Batch	Batch	Batch	Batch	Batch	Batch
Frequency of	Discharge	3-10 per week	l per week	3 per week for ea.	2 per week	2-3 per week	3 per week	l per week	2 per month	i per week
Average	volume of Discharge (Gallons/day)	20	0.1	(1) 1.0	1.0	0.3	0.5	0.2	3.4	Ī
Concentration of	Chemicals in Discharge (MAX)	HNO3=1% H2SO4=1% HCl=6%	HNO3=10% HF=7%	(1) H2O2=4.2% (2) HCl =3.8% H202=12.5%	H2SO4=20% H2O2=10%	HNO3=10% CH3CHOOH=15% HF=7%	HNO3=7% HF=6%	HF=7% H3PO4=5%	HNO3=15% HF=2.5% HCl=5%	HNO3=10% HF=7%
Chemicale in	Waste Discharge	H2SO4, HNO3, HCI	HNO3, HF	H2O2, HCI, HF	H2SO4, H2O2	HNO3, HF, Acetic acid	HNO3, HF	HF, H3PO4	HN03, HF, HC!	HNO3, HF
Chemicale Head	in Process	HZSO4, HNO3, HCl, KOH, Solvents	HNO3, HF, TCE, Methanol, Acetone	NH40H, H202, HCl, HF	KOH, H2SO4, H2O2	HCI, HF, HNO3, H2SO4, Acetic acid	HNO3, HT, Pd, Cr, Methanol	HF, H3PO4, Chlorobenzene	HNO3, HF, NH40H, HCI, H202, Methanol, TCE	HNO3, HF, Methanol
Description of	Process	Cleaning of glassware and teflon equipment	Cleaning and preparing silicon and germanium samples	Cleaning silicon wafers for lithography	Etching of silicon wafers	Sample preparation - cutting, cleaning, etching	Germanium Etching	Cleaning wafers for lithography	Etching silicon wafers	Germanium crystal growth
Doom	WOOD	102	133	137	137	216	224	236	229	260A

NOTE: the "Volume of Discharge" column represents the volume of waste that is discharged acid sinks. Also see "Classification of Hydrofluoric Acid Mixtures".

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Page	

Building 2 Fixed Treatment Unit Waste Stream Survey

EPA ID hber: CA 4890008986

nons	ıtch																				
Continuous	or Batch		Batch					Batch			Batch		,	Batch					-	Batch	
Frequency of	Discharge		HCI/HNO3/HF = 2	per month	 HF= 2 ner week		H2SO4 = 4 per week	2-3 per week			1 per month			5 days per week						1-2 per week	
Average	volume of	Discharge (Gallons/day)						0.2			0.002			0.25						0.02	
Concentration of	Chemicals in	Discharge (MAX)	H2SO4=15%	H2O2=15%	HINO3=10%	HCI=5%		CH3CHOOH=15%	FINO3=10%	HH=/%	HCI=6%			HF=5%						H2SO4=15% HCL=6%	
Chemicals in	Waste	Discharge	HNO3, HF, HCI,	H2SO4, H2O2				HNO3, HIF,	Acetic acid		HCI			HF			-			HCL, H2SO4	
Chemicals Used	in Process		HNO3, HF, HCI,	H2SO4, KOH,	NaOH, Methanoi,	Accione, 1 C.E., 1.1.1-TCA		HCI, HF, HNO3,	H2SO4, Acetic	acid	HCI			HF						HCL, H2SO4, H2O2, NaOH,	КОН
Description of	Process		Etching gallium	arsenide, quartz, &	silicon in crystal	growin experiments		Sample preparation	- cutting, cleaning,	etching	Cleaning	experimental	apparatus	Cleaning of glass	coverslips for	single molecule	studies using	confocal	microscopy	Cleaning silicon nitride	
Room			261A					263A			322			338 &	340					422	

NOTE: the "Volume of Discharge" column represents the volume of waste that is discharged acid sinks. Also see "Classification of Hydrofluoric Acid Mixtures".

Revised 2/10/98.

CLASSIFICATION OF HYDROFLUORIC ACID MIXTURES

BACKGROUND:

On December 17, 1993, Mr. David McGraw, Director of Environment, Health & Safety Division at Lawrence Berkeley Laboratory, requested a determination on whether dilute solutions of hydrofluoric acid are considered extremely hazardous wastes from Mr. James Strock, Director of California Environmental Protection Agency. (DIR93-151). Mr. Strock routed the letter to Mr. Ronald Pilorin, Chief of the Waste Evaluation Unit, Cal-EPA. Mr. Pilorin responded to Mr. McGraw on January 20, 1993.

In Mr. Pilorin's letter he noted,

"As you are well aware, there are no identified or approved testing methods to determine whether a waste which contains a water reactive substance such as hydrofluoric ... acid would be considered to be water reactive." He further states, "Section 66262.11, 22 CCR, states that a 'generator may determine that the waste from his particular facility or operation is not a hazardous waste [or an extremely hazardous waste, R.P.] by either: (1) testing the waste,...; or (2) applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used and the [hazardous waste or extremely hazardous waste, R.P.] characteristics,....' In absence of test methods identified within the extremely hazardous waste criteria, ANY test methods or assessment techniques can be used to satisfy the requirement for knowledge about the waste. Any other source of information may be used for this purpose as well. Unfortunately, at this time the Department does not have the staff or resources to immediately develop a specific test method." (emphasis added)

KNOWLEDGE OF THE WASTE:

From a survey of the users of the fixed treatment unit at building 2 (FTU 005) it has been determined that the highest percent of hydrofluoric acid, at the point of generation, is under 10% hydrofluoric acid. Typically, the hydrofluoric acid volume is 500 milliliters or less.

A report prepared by a certified professional chemical engineer at Sampson Engineering Associates (SAE) entitled, "Hydrofluoric Acid Hazardous/Extremely Hazardous Waste Classification", concludes that, "...liquids containing HF [hydrofluoric acid] at less than 38.2 weight percent concentration (it may be possible to demonstrate this conclusion for 47 weight percent solutions [SAE]) should be regulated as hazardous, not extremely hazardous."

Our past experience with solutions of less than 10% hydrofluoric acid also show that these solutions are not water reactive and therefore do not meet extremely hazardous waste criteria.

CONCLUSION:

Solutions of hydrofluoric acid less than 38.2% hydrofluoric acid are not extremely hazardous. These waste solutions will be managed as a hazardous waste.

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UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

<u></u>	(One page and attachments per unit)									
	Page <u>24</u> of <u>49</u>									
FACILITY ID#	BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As) 3.									
	Lawrence Berkeley National Laboratory									
I. TREATMENT UNIT										
UNIT ID# 606. UNIT TYPE/TIER 0	NUMBER OF TANKS 608. NUMBER OF CONTAINERS/ 609. TREATMENT AREAS									
FTU 006 a. CESQT b. CESW	17									
UNIT NAME 610. C. CA	MONTHLY TREATMENT 611. UNIT OF MEASURE 612. VOLUME									
Building 77 Ultra High Vacuum 🛛 d. PBR	10,000 □ a. Pounds ⋈ b. Gallons									
Cleaning Facility										
SPECIFIC WASTE TYPE TREATED (narrative)	613.									
Aqueous waste and sludge containing metals listed in 22 CCR 66	5261.24(a)(2).									
TREATMENT PROCESS DESCRIPTION (narrative)	614.									
Metals precipitation, pH adjustment, and sludge dewatering. See	attached, "Process Description, Ultra High Vacuum Cleaning									
Facility & Fixed Treatment Unit FTU 006" for a a more detailed										
	daya financia da parte a wasan kata kata kata kata kata kata kata ka									
(NOTE: For each treatment unit, complete and attach the appropriate Waste and	Treatment Process Combinations page.)									
II. BASIS FOR NOT NEEDING	FEDERAL PERMIT (Check all that apply)									
a. The treated waste is not a hazardous waste under federal law (California-only waste).	f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg./month generators and 180 or 270 days for generators of 100 to 1,000 kg./month.									
	g. Recyclable materials are reclaimed to recover silver or other precious metals.									
☐ c. Treatment in elementary neutralization units.	☐ h. Empty container rinsing and/or treatment.									
☐ d. Treatment in a totally enclosed treatment facility.	☐ i. Other (specify below)									
,	- Company of the control of the cont									
 e. Federal conditionally exempt small quantity generator (generated 100 kg., approximately 27 gallons, or less of hazardous waste in a calendar month). 										
III. RESIDUALS MANAGEMI	ENT DESCRIPTION (Check all that apply)									
57 201	Residual hazardous waste hauled offsite by a registered hauler. 616.									
☐ a. Discharge non-hazardous aqueous waste to POTW or sewer. ☐ a. Discharge non-hazardous aqueous waste to POTW or sewer.										
Disabases non hazardous aquaque unate under a MDDES accesis	d. Offsite recycling									
□ b. Discharge non-hazardous aqueous waste under a NPDES permit.	e. Thermal treatment									
☐ c. Dispose of non-hazardous solid waste residues at an offsite location.	☐ f. Disposal to land									
L. Dispose of non-nazardous sould waste residues at an offsite location.	☑ g. Further treatment									
	h. Other method of disposal (describe below)									
SECONDARY CONTAINMENT INSTALLATION DATE (If required) 1990	617.									

Onsite Hazardous Waste Treatment Notification – Unit [(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page freach treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided the laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 606. UNIT ID NUMBER Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
- 607. UNIT TYPE / TIER Check the appropriate box to indicate unit type under the Tiered Permitting program.
- 608. NUMBER OF TANKS Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
- 609. NUMBER OF CONTAINERS/TREATMENT AREAS Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
- 610. UNIT NAME Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
- 611. MONTHLY TREATMENT VOLUME Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
- 612. UNIT OF MEASURE Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
- 613. SPECIFIC WASTE TYPE TREATED Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
- 614. TREATMENT PROCESS DESCRIPTION Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
- 615. BASIS FOR NOT NEEDING FEDERAL PERMIT Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Agen (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).

- 616. RESIDUALS MANAGEMENT DESCRIPTION Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
- 617. SECONDARY CONTAINMENT INSTALLATION DATE Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM ONSITE TIERED PERMITTING

PERMIT BY RULE (PBR) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply)

	606.			1.		05 /0
UNIT ID# FTU 006		Facility ID#				Page 25 of 49
Reduction of hexaval a. both pH and addition	ent chromium to trivalent chro of the reducing agent are auto		metabisi		•	ulfide or sulfur dioxide provided
 a. pH adjustment or net b. Precipitation or cryst c. Phase separation by f d. Ion exchange. i. Reverse osmosis. f. Metallic replacement 	tralization. allization. iltration, centrifugation or grav		□ g. □ i. □ j. □ k. □ l.	Plating the metal of Electrodialysis Electrowinning or e Chemical stabilizat Evaporation. Adsorption	ate an electrode. electrolytic recovery ion using silicates and/or cem	entitious types of reactions.
8240 may be treated by t a. Phase separation by t b. Adsorption. c. Distillation. d. Biological processes e. Photodegradation us f. Air stripping or stear	he following technologies:: iltration, centrifugation or grav conducted in tanks or containe ag ultraviolet light, with or wit n stripping.	7% as measured by EPA Method 5 vity settling, but excluding super crit is and utilizing naturally occurring thou the addition of hydrogen perox	ical fluid nicroorg	extraction. anisms. one, provided the tra	eatment is conducted in an end	:losed system.
be treated by the followi a. Chemical stabilization b. Physical processes were c. Drying to remove we	ng technologies: n using silicates and/or cemen hich change only the physical tter.	s which contain or are contaminat titious types of reactions. properties of the waste such as grind ies such as size, magnetism or densi	ling, shre			(a)(2) and/or fluoride salts may
☐ a. Chemical stabilization ☐ b. Drying to remove we	n using silicates and/or cemen ner.		∐ c.	•	y filtration, centrifugation or	
following technologies: a. Chemical stabilizativ b. Drying to remove w. c. Phase separation by d. Screening to separat e. Separation based on	on using silicates and/or cemen ater. filtration, centrifugation or gra e components based on size. differences in physical propert	vity settling. des such as size, magnetism or densi	ty.			
technologies: ☐ a. Chemical stabilizati	on using silicates and/or cemen	y the Department as special waste utitious types of reactions.	☐ c.		y filtration, centrifugation or	
	ne wastes may be treated by t	the following technology:		:		
9. Soils contaminated with		R, Section 66261.24(a)(2), (Persist	ent and l	Bioaccumulative To	oxic Substances) may be tree	sted by the following
technologies: ☐ a. Chemical stabilizati ☐ b. Screening to separa	on using silicates and/or cemer e components based on size.	ntitious types of reactions.	□ c.	Magnetic separati	on.	
□ a. Phase separation by □ b. Distillation. □ c. Neutralization. □ d. Separation based on □ e. Reverse osmosis. □ f. Biological processe	filtration, centrifugation or gra differences in physical proper s conducted in tanks or contain	th water and oil/water separation in tvity settling, but excluding super cr ties such as size, magnetism or dens ters and utilizing naturally occurring	itical flui ity. ; microor	d extraction. gunisms.		
specified in Title 40 of t and which are not exclu applicable requirement a. Rinsing with a suita h. Physical processes	he Code of Federal Regulation ded from regulation may be s.	not constructed of wood, paper, co ons, section 261.7 or inner liners re trented by the following technolog g or removing the hazardous consti- inding or puncturing, that change or container or inner liner.	emoved I gles prov	rom empty contain ided the treated co ich the container hel	ers that once held nazardou atainers and rinseate are mo d.	s waste or mizardous material maged in compliance with
a. Mixing the resin co	=	he manufacturer's instructions.	:			
Permit by Rule.		the Department pursuant to Sect			and Safety Code as appropr	late for authorization under
☐ Certified	1 Technology Number	r:				

Waste and Treatment Process Combinations Form PBR Instructions (Formerly DTSC Form 1772D)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Permit by Rule (PBR) tier. (Note: Reactive and extremely hazardous wastes are not allowed to be treated under this tier.)

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 606. UNIT ID NUMBER Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification Unit form).
- 1. FACILITY ID NUMBER This space is for agency use only.
- 630. WASTE AND TREATMENT PROCESS COMBINATIONS (PBR) -

Use this page only for a PBR unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description			
Neutralex	Scigen 333 East Gardena Blvd. Gardena, CA 90248	97-01-0024	629/97 (expires 6/29/00)	CESW	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a			
			:		provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.			

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

Process Description Ultra High Vacuum Cleaning Facility & Fixed Treatment Unit FTU 006 LBNL - Building 77

The Ultra High Vacuum Cleaning Facility (UHVCF) at building 77 conducts treatment of aluminum and non-aluminum metal parts through cleaning and/or application of a satin finish (desmut bath and rinse). An estimated maximum of 10,000 gallons/month of wastewater associated with these various processes are treated in the Fixed Treatment Unit, FTU 006. The wastewater is generated from rinse tanks and process equipment pieces within the UHVCF.

An acid waste is generated by six flow-through rinse tanks. The effluent from the rinse tanks flows to a dedicated acid sump and then is pumped to FTU 006 for treatment. These rinse tanks rinse parts which come from the following baths:

- chromic/nitric acid bright dip bath
- sulfuric/nitric acid bright dip bath
- hydrochloric acid bath (pickling)
- phosphoric/sulfuric acid bath (stainless steel electropolish)
- sodium bisulfate bath (oxide remover, desmut)
- hydrofluoric acid bath
- electroless nickel bath
- blue anodize bath
- black anodize bath
- iridite 14-2 bath
- nickel acetate seal bath
- ferric chloride etch rinse water (Chemcut Etcher)

An alkaline waste, typically below pH 12 at the point of generation, is generated from two flow-through rinse tanks. The effluent from the rinse tanks flows to a dedicated caustic sump and then is pumped to FTU 006 for treatment. These rinse tanks rinse parts which come from the following baths:

- sodium hydroxide bath (caustic etch)
- sodium hydroxide/acetylsalicylic acid/zinc oxide bath (B.N. cleaner)

An additional alkaline waste from Building 77H, typically below pH 12 at the point of generation, is generated from a couple of processes: Riston Stripper and Silk-Screening Cleaner. Parts are rinsed from these two processes in the sink in Building 77H which flows to a caustic sump (sump #2) in Building 77, room 156, and then is pumped to FTU 006 for treatment. The alkaline waste from Building 77 H is generated from the following process:

- Potassium Hydroxide (Riston Stripper)
- Sodium Hydroxide (Silk-Screening cleaner)

Process Description Ultra High Vacuum Cleaning Facility & Fixed Treatment Unit FTU 006 LBNL - Building 77

Additional non-routine bench top processes may also contribute to the acid/metals waste stream. A non-routine bench top process could involve nickel plating a small part in a 250 milliliter beaker and then dipping the part in a rinse water bath (which drains to the acid sump) for cleaning. Another non-routine bench top process could involve brush plating a small area (e.g. 4 square inches) of a large part to repair that part. This large part would then be dipped into a rinse water bath (which drains to the acid sump) for cleaning.

The Fixed Treatment Unit, FTU 006, provides the following treatment to rinse water:

- Sodium metabisulfite and sodium hydroxide are added automatically for hexavalent chromium reduction.
- Neutralization of the wastewater occurs through automatic pH adjustment.
- Metals removal occurs through flocculation with a polyelectrolyte and clarification.
- Sludge is dewatered in a filter press.
- Filter cake is dried in a low temperature, closed loop air handling system (J-Mate Batch Dryer).

The Fixed Treatment Unit, FTU 006, treats two waste streams coming from the B77 UHVCF. One waste stream contains metals, hexavalent chromium, and typically has a pH below 2 (acid sump). The second waste stream contains a mixture of bases (caustic sump).

Tank 4, an acid rinse storage tank, receives incoming acid rinse water from the B77 UHVCF acid sump. The acid wastewater from Tank 4 flows to Tank 5A, where the acid waste is neutralized with sodium hydroxide and hexavalent chromium is reduced with the addition of sodium metabisulfite. The acid wastewater flows from Tank 5A to Tank 5B. Tank 5B provides further neutralization with sodium hydroxide and further reduction of hexavalent chromium with sodium metabisulfite. Tank 3 receives incoming alkaline waste from the B77 caustic sump. The alkaline wastewater from Tank 3 flows to Tank 6, where the alkaline wastewater is neutralized with sulfuric acid.

After pH adjustment, the wastewater from Tank 5B flows into Tank 6 and Tank 6 flows into Tank 7, a flocculation tank, where, with the addition of a flocculating agent and a polyelectrolyte coagulant, the dissolved metals begin to form a flocculent. The wastewater/flocculent flows into Tank 8, a clarifier, where the flocculent is thickened and removed. The removed flocculent or sludge flows to a filter press, where the sludge is dewatered. The water from the filter press is pumped back to Tank 4 (the acid rinse storage tank), where the treatment process begins, and is then treated to remove any metals.

The treated wastewater exits Tank 8 and flows to Tank 9, an effluent storage tank. The treatment system has been designed to meet East Bay Municipal Utility District (EBMUD) discharge limits once the treated wastewater leaves Tank 9. However, a sand filter (Tank 19), which will reduce metal concentration further, has been placed between Tank 9 and the point of sewer discharge. For maintenance purposes, the sand filter may be bypassed if necessary. The sand filter is the first piece of equipment required for a future recycling system that will recycle all wastewater back to the B77 UHVCF. The sand filter

Process Description

Ultra High Vacuum Cleaning Facility & Fixed Treatment Unit FTU 006 LBNL - Building 77

(Tank 19) is backwashed into Tank 10 during B77 UHVCF off hours. The backwash from Tank 10 is pumped to Tank 3 and then to Tank 6 & 7, where neutralization and then flocculation to precipitate metals occurs.

To ensure contaminant levels do not exceed permissible levels established in EBMUD's discharge requirements, wastewater discharged to EBMUD is periodically sampled and analyzed according to a schedule determined annually upon EBMUD permit renewal, currently four times per year.

This treatment process generates a sludge which contains metals. The sludge is dewatered in a filter press. The resulting filter cake is then put in a low heat batch dryer (US Filter, J-Mate, model J-203) to further remove water. The dried filter cake, a residual hazardous waste, typically contains cadmium, chromium, and lead. The filter cake is collected in a 55-gallon drum for transportation. The waste drum of filter cake is picked up by Waste Management staff and taken to the Hazardous Waste Handling Facility (HWHF). The filter cake waste is stored at the HWHF until analytical test results are received to fully characterize the waste. Then the waste drum is prepared for shipment off-site by Waste Management staff so that the waste may undergo further treatment. Shipment off-site is by a registered hazardous waste hauler. An estimated maximum of 200 pounds of filter cake is generated per year.

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EPA_ID Number: CA4890008986

Strangio and Associates

civil & environmental engineers 1789 Cottle Ave. San Jose, CA 95125

(408) 978-9604

FAX (408) 448-5284

Mr. Pablo Orozco, Project Manager Operation Division, Facilities Department Lawrence Berkeley Laboratory 1 Cyclotron Road Berkeley, Ca. 94720 3-7-96

Ref: Certification of Containment and Tankage for PBR Authorization

Dear Mr. Orozco:

Based on my onsite visits and examination of the containment and tankage(DMP Waste Water Treatment System) located at Building 77 as well as design drawings I found the following conditions.

For the purposes of this certification the treatment system consists of the transfer tankage, pumps, piping, and containment of the units which transfer wastewater to the treatment system as well as the descrete treatment system and it containment.

The containment consists of coated concrete vaults of sufficient size to contain the volumes required under the containment quidelines. The vaults are located under an overhanging roofs, and all the areas are equipped with a fire suppression sprinkler system consisting of area sprinklers as well as duct sprinklers(where applicable).

The treatment area tanks are all constructed of fiberglass/epoxy with builtin earthquake restraining clips. They were fabricated and installed approximately 10 years ago, however they were never put into use. They appear to be in a like new condition and can be expected to have an extended service life. It would be prudent to carry out periodic inspections to be assured that there is no delamination, or exposed fibers that need to be recoated.

The attached stamped list constitute the tanks which are a part of this certification under the following regulations:

Title 22, Code of California Regulations(CCR):

Section 6626.175(c) Containment

The containment system as presently configured is suitably designed to contain and control leaks, spills, , and sprinkler flows.

Section 66265.192(a)(1) Design Standards Meets the required design standards

Section 66265.192(a)(2) Hazardous Characteristics of Waste The systems are compatible with the chemicals being treated.

Section 66265.192(a)(3) Corrosion Protection

Meets all regulatory requirements and should not be adversely affected in any way.

Section 66265.192(a)(4) Underground Protection

Appears to meet regulatory requirements based on the inspection.

Section 66265.192(a)(5) Foundation and Seismic Design

Appears to meet regulatory requirements based on the inspection.

Section 66265.193(c)(2) Compatibility, Strength, and Thickness

The structural integrity of the concrete containment structure appears to meet regulatory requirements based on the inspection.

Section 66265.193(c)(3) Leak Detection and Alarm

Appears to meet regulatory requirements based on inspection.

Section 66265.193(e)(2) Volume and Draining of Secondary Containment

Adequate volume is provided.

Section 66265.193(e)(2) Freedom from Gaps and Cracks in the Secondary Containment

Gaps and cracks previously noted have been repaired and the coating now meets the regulatory requirements.

I hereby certify that the referenced system and containment meets the requirements of Title 22. (See attached Tank List)

Yours Truly

William Strangio, D.Sc., P.E.

TANKAGE IN MAIN CONTAINMENT

Tank Number			MAT. C	CONDITION
5 - Chrome Treatment Tan	k -	600 gal	FG	Good
6 - Neutralizing Tank	-	680 gal	11	Ħ
7 - Flocculation Tank	-	230 gal	11	11
8 - Clarifier	- 3,	300 gal	11	u
9 - Effluent Storage	- 2,	000 gal	. II	tī
Total Volume in this ar	ea - 6,	.810 gal		
TANKAGE	IN FIL	TER ARE	A	
10 - Backwash storage	- 1,	,500 gal	. 11	11
Filter	-	200 gal	. Steel	New
Total volume in this ar	rea - 1,	,700 ga]	-	
TANKAGE I	N ACID	RINSE A	REA	
3 - Acid rinse storage	- 1	,000 gal	L FG	Good
TANKAGE IN C	AUSTIC	RINSE S	TORAGE	
4 - Caustic rinse storaç	ge - 1	,000 gai	<u>.</u> 11	11
TANKAGE	IN UHV	F SHOP		
ACID - Diliute Rinse	- 130	gal	Polyp:	ro New
CAUSTIC - Dilute Rinse	- 130	gal	11	11
DI RINSE - Dilute Rinse	- 130	gal	11	II
S	TORAGE GAL	AREA SF G	SPRINKL ALS(in 2	
MAIN CONTAINMENT AREA	5245	701	2103	
BACKWASH STORAGE CON.	2623	117	351	
ACID RINSE STOR. CON.	2480	111	333	
CAUSTIC RINSE STOR. CON.	2241	100	300	
UHVF SHOP CON	10790	1500	8500	

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9-21-99

Mr. Lonnie Simonian Project Manager Operation Division, Facilities Department Lawrence Berkeley Laboratory 1 Cyclotron Road Berkeley, Ca. 94720

Ref: Certification of Additional Tankage for PBR Authorization - Bldg.77

Dear Mr.Simonian:

Based on my onsite visit of 9-18-99, and a detailed examination of the four tanks not previously certified of the tankage which constitutes a portion of the DMP provided Waste Water Treatment System, located at Building 77, as well as a review of system drawings I found the following conditions.

For the purposes of this certification, the additional four tanks consists of: an existing, but not actively used tank which has been re-piped and equipped to perform an addition stage of Chrome Reduction, there by increasing the nominal treatment capacity. The second tank consists of an existing tank which was already in service(and previously certified) which has been modified by the addition of a settling cone and the addition of sludge removal piping through the tank wall. The third and fourth tanks, were the addition of two existing tanks(unused) to serve the purpose of providing more storage capacity as "overflow" tanks, thereby increasing the margin of safety for storage of wastewater flows.

It should be pointed out that when this Building was previously certified in March of 1996, the tankage mentioned above was included in that certification of containment and tankage, however all four tanks are being used for different purposes or have been modified in some way.

The attached stamped list constitute the tanks which are a part of this certification under the following regulations: Title 22, Code of California Regulations(CCR):

Section 66265.175(c) Containment - The containment system as presently configured is suitably designed to contain and control leaks, spills, and sprinkler flows.

Section 66265.192(a)(1) Design Standards - Meets the required design standards

- Section 66265.192(a)(2) Hazardous Characteristics of Waste -The systems are compatible with the chemicals being treated.
- Section 66265.192(a)(3) Corrosion Protection-Meets all regulatory requirements and should not be adversely affected in any way.
- Section 66265.192(a)(4) Underground Protection Appears to meet regulatory requirements based on the inspection.
- Section 66265.192(a)(5) Foundation and Seismic Design Appears to meet regulatory requirements based on the inspection.
- Section 66265.192(k) Tank System Assessment The tanks are described on the attached pages and comply with the information requested.
- Section 66265.193(c)(2) Compatibility, Strength, and Thickness The structural integrity of the concrete containment structure appears to meet regulatory requirements based on the inspection.
- Section 66265.193(c)(3) Leak Detection and Alarm Appears to meet regulatory requirements based on inspection.
- Section 66265.193(e)(2) Volume and Draining of Secondary Containment Adequate volume is provided.
- Section 66265.193(e)(2) Freedom from Gaps and Cracks in the Secondary Containment Gaps and cracks previously noted have been repaired and the coating now meets the regulatory requirements.
- I hereby certify that the referenced system and containment meets the requirements of Title 22.

 (See attached Tank List)

Yours Truly

William Strangio, D.Sc., P.E.

cc. Robert Fox

TANK CERTIFICATION INSPECTION REPORT SEPTEMBER 1999

TANK NAME - Chrome Reactor Tank - T 5A MANUFACTURER - Red Ewald Co.

COMPANY SERIAL NUMBER - #20842

NOMINAL CAPACITY - 660 gallons

DIMENSIONS - 58" dia. X 54" H to rim

YEAR of MANUF. - 1989

DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical tank, which is equipped with four(4) holdown clips. The nominal wall thickness is 1/2", with bottom edge banding of approximately 1" thickness where the holddown clips are located. The upper edge of the tank has a 2" wide rim, to which is attached a polypro sectional tank cover. Influent waste pipes and recirculation lines enter the tank through the upper cover. There is one(1) 4" diameter line leaving the side of the tank for connection to Tank 5 B. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The tank is in excellent condition, with no evidence of delamination or degradation of any type.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals

The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Periodic inspections(on a yearly basis) should be a standard practice. to determine the tanks condition and also the state of the piping connected to the tank (which is in like new condition).

The tank is located within the main secondary containment berm which houses most of the treatment system components. It is supported by and anchored to metal stands(which in turn are anchored to the base slab), which provides for gravity flow through the system to a post clarification holding tank. The secondary containment berm is equipped with sensors to detect liquid leaks.

3

TANK NAME - Clarifier Tank

MANUFACTURER - Red Ewald Co.

COMPANY SERIAL NUMBER - #20901

NOMINAL CAPACITY - 3300 gallons

DIMENSIONS - 107" dia. X 84" H to rim

YEAR of MANUF. - 1989

DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical tank, which is equipped with eight(8) hold down clips. The nominal wall thickness is 3/4", with bottom edge banding of approximately 11/4" thickness where the holddown clips are located. Because of the height of the tank side wall, the tank restraints are anchored directly to the coated concrete base slab. The upper edge of the tank has a 3" wide rim from which the tanks outlet weir is suspended. Influent waste pipes and effluent pipes are attached to the tank walls at height of 40" from grade. There are two(2)3" diameter blind flanged outlets on opposite sides of the tank, and two(2) 6" diameter lines located at approximately 90 degree from each other which constitute the influent and effluent lines. In addition there are two(2") diameter sludge lines at the bottom edge of the tank. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The tank is in excellent condition, with no evidence of delamination or degradation of any type. The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals.

Just prior to the certification inspection a cone insert had been added to the interior of the tank to improve the removal of the settling sludge. The cone was fabricated of an epoxy/fiberglass laminate. It is expected that the cone shall have a service life identical to the tank.

Periodic inspections(on a yearly basis) should be a standard practice, to determine the tanks condition and also the state of the piping connected to the tank (which is presently in a like new condition).

TANK NAME - ACID RINSE OVERFLOW TANK T 18 MANUF. - Red Ewald Co.

COMPANY SERIAL NUMBER - #20837

NOMINAL CAPACITY - 730 gallons

DIMENSIONS - 60" dia. X 60" H to rim

YEAR of MANUF. - 1989

DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical



tank, which is equipped with four(4) holdown clips, which hold the tank directly to the coated concrete base slab. The nominal wall thickness is 1/2", with bottom edge banding of approximately 1" thickness where the holdown clips are located. The upper edge of the tank has a 2" wide rim, to which is attached a polypro sectional tank cover. An Influent waste overflow line enters the tank through the upper cover. There is one(1) 1 1/2" diameter line leaving the side of the tank near the bottom for connection to the transfer pumps. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The tank is in excellent condition, with no evidence of delamination or degradation of any type. The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals

Periodic inspections(on a yearly basis) should be a standard practice, to determine the tanks condition and also the state of the piping connected to the tank (which is in a like new condition).

As described by its title the tank serves the purpose of containing any "overflows" beyond the capacity of the primary receiver tank. Both tanks are located inside their own secondary containment berm, which is equipped with liquid sensors, to detect spills of liquids into the secondary containment.

TANK NAME - CAUSTIC RINSE OVERFLOW TANK T 11 MANUF. - Red Ewald Co.

COMPANY SERIAL NUMBER - #20836

NOMINAL CAPACITY - 730 gallons

DIMENSIONS - 60" dia. X 60" H to rim

YEAR of MANUF. - 1989

DESCRIPTION - The tank is a laminated fiberglass and epoxy resin open top cylindrical vertical tank, which is equipped with four(4) holdown clips, which hold the tank directly to the coated concrete base slab. The nominal wall thickness is 1/2", with bottom edge banding of approximately 1" thickness where the holdown clips are located. The upper edge of the tank has a 2" wide rim, to which is attached a polypro sectional tank cover. An Influent waste overflow line enters the tank through the upper cover. There is one(1) 1 1/2" diameter line leaving the side of the tank near the bottom for connection to the transfer pumps. The tank exterior is painted grey and is labeled with colored labels of sufficient size. The manufacturer has attached a stainless steel identification plate to the tank. The

tank is in excellent condition, with no evidence of delamination or degradation of any type. The tank can be expected to have an extended service life of an additional 10 to 15 years, even though it is now 10 years old.

Both the tank materials and the connecting piping are composed of materials which are impervious to long term exposures to the wastewater components and the treatment chemicals

Periodic inspections(on a yearly basis) should be a standard practice. to determine the tanks condition and also the state of the piping connected to the tank (which is in a like new condition).

As described by its title the tank serves the purpose of containing any "overflows" beyond the capacity of the primary receiver tank. Both tanks are located inside their own secondary containment berm, which is equipped with liquid sensors, to detect spills of liquids into the secondary containment.



UNIFIED PROGRAM CONSOLIDATED FORM HAZARDOUS WASTE

ONSITE HAZARDOUS WASTE TREATMENT NOTIFICATION – UNIT PAGE

· · · · · · · · · · · · · · · · · · ·	(One page and attachments per unit)
	Page 39 of 49
FACILITY ID#	BUSINESS NAME (Same as FACELITY NAME or DBA – Doing Business As) 3. 3.
	Lawrence Berkeley National Laboratory
I. TREA'	IMENT UNIT
UNIT ID# 606. UNIT TYPE/TIER	607. NUMBER OF TANKS 608. NUMBER OF CONTAINERS/ 609. TREATMENT AREAS
FTU 007 a. CESQT	4
UNIT NAME 610. C. CA	MONTHLY TREATMENT 611. UNIT OF MEASURE 612.
Building 67 Molecular Foundry	3450 □ a. Pounds ☑ b. Gallous
FTU c. CEL	
SPECIFIC WASTE TYPE TREATED (narrative)	613.
Inorganic acid and alkaline wastes.	
TREATMENT PROCESS DESCRIPTION (narrative)	614.
and Alkaline Waste, Molecular Foundry Nanofabrication Facilit (NOTE: For each treatment unit, complete and attach the appropriate Waste and	
II. BASIS FOR NOT NEEDING	FEDERAL PERMIT (Check all that apply)
a. The treated waste is not a hazardous waste under federal law (California-only waste).	f. Treatment in an accumulation tank or container within 90 days for over 1,000 kg/month generators and 180 or 270 days for generators of 100 to 1,000 kg/month.
	g. Recyclable materials are reclaimed to recover silver or other precious metals.
☑ c. Treatment in elementary neutralization units.	☐ h. Empty container rinsing and/or treatment.
☐ d. Treatment in a totally enclosed treatment facility.	i. Other (specify below)
☐ e. Federal conditionally exempt small quantity generator (generated 100	_ i. Gillet (aptent)
kg., approximately 27 gallons, or less of hazardous waste in a calendar month).	
III. RESIDUALS MANAGEM	ENT DESCRIPTION (Check all that apply)
☐ a. Discharge non-hazardous aqueous waste to POTW or sewer. ☐ a. Discharge non-hazardous aqueous waste to POTW or sewer. ☐ a. Discharge non-hazardous aqueous waste to POTW or sewer.	Residual hazardous waste hauled offsite by a registered hauler. 616.
b. Discharge non-hazardous aqueous waste under a NPDES permit.	d. Offsite recycling
E b. Distinge non nature out a que a voir a provincia de la companya de la compan	e. Thermal treatment
c. Dispose of non-hazardous solid waste residues at an offsite location.	☐ f. Disposal to land ☐ g. Further treatment
	☐ h. Other method of disposal (describe below)
<u> </u>	617.
SECONDARY CONTAINMENT INSTALLATION DATE (If required)	ui.

Onsite Hazardous Waste Treatment Notification – Unit [(Formerly DTSC Form 1772A,B,C,D,L)]

Complete an Onsite Hazardous Waste Treatment Notification - Unit page and a Waste and Treatment Process Combinations page each treatment unit operating at this facility. Commercial Laundries are not required to complete unit specific pages, provided the laundering is the only hazardous waste treatment activity conducted by the facility. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 1. FACILITY ID NUMBER This space is for agency use only.
- 3. BUSINESS NAME Enter the complete Facility Name.
- 606. UNIT ID NUMBER Enter a unique number for each unit. All unit numbers must be clearly labeled on the plot plan/map.
- 607. UNIT TYPE / TIER Check the appropriate box to indicate unit type under the Tiered Permitting program.
- 608. NUMBER OF TANKS Enter the number of tanks used in the unit. ["Tank" means a stationary device, designed to contain an accumulation of hazardous waste, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.]
- 609. NUMBER OF CONTAINERS/TREATMENT AREAS Enter the number of containers/container treatment areas used in the unit. ["Container" means any device that is open or closed, and portable in which a material can be stored, handled, treated, transported, disposed of, or recycled.] "Treatment Area" is a location set aside and used to treat waste in containers.
- 610. UNIT NAME Enter the name of the treatment unit. A treatment unit is defined as a tank, a container, or a combination of tanks or tank systems and/or containers located together that are used in sequence to treat or accumulate one or more compatible hazardous waste streams. The devices are either plumbed together or otherwise linked so as to form one system.
- 611. MONTHLY TREATMENT VOLUME Enter the estimated monthly total volume of hazardous waste treated in this unit. If the volume fluctuates significantly by month, enter the maximum volume treated in any month.
- 612. UNIT OF MEASURE Check a box to indicate whether the treatment volume unit of measure is pounds or gallons.
- 613. SPECIFIC WASTE TYPE TREATED Describe the specific waste type(s) treated (e.g. If the waste qualifies as an aqueous waste with metals or organics, indicate the specific metals or organics).
- 614. TREATMENT PROCESS DESCRIPTION Describe the treatment process(es) used. Indicate if the activities are seasonal or periodic.
- 615. BASIS FOR NOT NEEDING FEDERAL PERMIT Check the reason(s) that best describe why your onsite treatment unit does not need a federal hazardous waste permit. You must indicate at least one reason to prove your eligibility for the onsite treatment tiers. If you are unsure how these exemptions apply to your operation, contact your Certified Unified Program Ager (CUPA), the DTSC Regional Office closest to you, the U.S. EPA Region IX RCRA Information Line at (415) 744-2074, or the U.S. EPA RCRA Hotline at (800) 424-9346. The eight most common reasons for not needing a federal permit are listed on this form. There is also a space to specify any other reason for exemption and a supporting regulatory citation. The following terms are defined in 40 CFR §260.10:

Wastewater Treatment Unit - A device which: (1) is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act, and (2) receives and treats or stores an influent wastewater that is a hazardous waste or that generates and accumulates a wastewater treatment sludge that is a hazardous waste or that treats or stores a wastewater treatment sludge which is a hazardous waste, and (3) meets the definition of tank or tank system.

Elementary Neutralization Unit - A device which (1) is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic or they are listed only for this reason, and (2) meets the definition of tank, tank system, container, transport vehicle, or vessel.

Totally Enclosed Treatment Facility - A facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment.

NPDES Permit - A permit issued by a regional water board allowing discharge of waste to the environment under the National Pollutant Discharge Elimination System (NPDES).

- 616. RESIDUALS MANAGEMENT DESCRIPTION Check the appropriate box(es) to describe how treatment residuals are managed. If box h. is checked, describe the "other" methods in the space provided.
- 617. SECONDARY CONTAINMENT INSTALLATION DATE Enter the date the secondary containment was installed.

UNIFIED PROGRAM CONSOLIDATED FORM ONSITE TIERED PERMITTING

PERMIT BY RULE (PBR) PAGE

WASTE AND TREATMENT PROCESS COMBINATIONS

(One page per treatment unit. Check all that apply) of 49 Page 40 UNIT ID# FTU 007 Facility ID# 630. Aqueous wastes containing hexavalent chromium may be treated by the following process: Reduction of hexavalent chromium to trivalent chromium with sodium bisulfite, sodium metabisulfite, sodium thiosulfate, ferrous sulfate, ferrous sulfide or sulfur dioxide provided both pH and addition of the reducing agent are automatically controlled. Aqueous wastes containing metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies: □ g. □ h. Plating the metal onto an electrode. pH adjustment or neutralization. | b. Precipitation or crystallization. Electrodialysis Electrowinning or electrolytic recovery Phase separation by filtration, centrifugation or gravity settling. □ i. Chemical stabilization using silicates and/or cementitious types of reactions. □ d. Ion exchange. Evaporation. Reverse osmosis. Adsorption Пf. Metallic replacement. Aqueous wastes with total organic carbon less than 10% as measured by EPA Method 9060 and less than 1% total volatile organic compounds as measured by EPA Method 8240 may be treated by the following technologies:: a. Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction. b. Adsorption. Distillation. □ c. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms. ☐ d. Photodegradation using ultraviolet light, with or without the addition of hydrogen peroxide or ozone, provided the treatment is conducted in an enclosed system. □ e. Air stripping or steam stripping. Sludges, dusts, solid metal objects and metal workings which contain or are contaminated with metals listed in Title 22, CCR, Section 66261.24 (a)(2) and/or fluoride salts may be treated by the following technologies: Chemical stabilization using silicates and/or cemeatitious types of reactions. □ a. Physical processes which change only the physical properties of the waste such as grinding, shredding, crushing or compacting. | b. | c. Drying to remove water. Separation based on differences in physical properties such as size, magnetism or density. П а. Alum, gypsum, lime, sulfur or phosphate sludges may be treated by the following technologies: in c. Phase separation by filtration, centrifugation or gravity settling. a. Chemical stabilization using silicates and/or cementitious types of reactions. ☐ b. Drying to remove water. Wastes identified in Title 22, CCR, Section 66261.120, that meet the criteria and requirements for special waste classification in Section 66261.122 may be treated by the following technologies: Chemical stabilization using silicates and/or cementitious types of reactions. □ a. ☐ b. Drying to remove water. Phase separation by filtration, centrifugation or gravity settling. d. Screening to separate components based on size. ☐ e. Separation based on differences in physical properties such as size, magnetism or density. Wastes, except asbestos, which have been classified by the Department as special wastes pursuant to Title 22, CCR, Section 66261.124, may be treated by the following technologies: C. Phase separation by filtration, centrifugation or gravity settling. Chemical stabilization using silicates and/or cementitious types of reactions. Па. d. Magnetic separation. □ b. Drying to remove water. Inorganic acid or alkaline wastes may be treated by the following technology: pH adjustment or neutralization. Soils contaminated with metals listed in Title 22, CCR, Section 66261.24(a)(2), (Persistent and Bioaccumulative Toxic Substances) may be treated by the following technologies: □ c. Magnetic separation. Chemical stabilization using silicates and/or cementitious types of reactions. П а. Screening to separate components based on size. □ b. Used oil, unrefined oil waste, mixed oil, oil mixed with water and oil/water separation sludges may be treated by the following technologies: Phase separation by filtration, centrifugation or gravity settling, but excluding super critical fluid extraction. □ Ъ. Neutralization. ☐ c. Separation based on differences in physical properties such as size, magnetism or density. ☐ d. ☐ e. Reverse osmosis. Biological processes conducted in tanks or containers and utilizing naturally occurring microorganisms. Π£ 11. Containers of 110 gallons or less capacity which are not constructed of wood, paper, cardboard, fabric, or any other similar absorptive material, which have been emptied as specified in Title 40 of the Code of Federal Regulations, section 261.7 or inner liners removed from empty containers that once held hazardous waste or hazardous material and which are not excluded from regulation may be treated by the following technologies provided the treated containers and rinsente are managed in compliance with applicable requirements. Rinsing with a suitable liquid capable of dissolving or removing the hazardous constituents which the container held. Physical processes such as crushing, shredding, grinding or puncturing, that change only the physical properties of the container or inner liner, provided the container or inner liner □ b. is first rinsed and the rinseate is removed from the container or inner liner. Multi-component resins may be treated by the following process: Mixing the resin components in accordance with the manufacturer's instructions. A waste stream technology combination certified by the Department pursuant to Section 25200.1.5 of the Health and Safety Code as appropriate for authorization under Certified Technology Number:

Waste and Treatment Process Combinations Form PBR Instructions (Formerly DTSC Form 1772D)

This Waste and Treatment Process Combinations page lists those waste and treatment combinations certified by the Department of Toxic Substances Control (DTSC) pursuant to Health and Safety Code (H&SC) §25200.1.5 for authorization under the Permit by Rule (PBR) tier. (Note: Reactive and extremely hazardous wastes are not allowed to be treated under this tier.)

it (

Complete a separate Waste and Treatment Process Combinations page for each unit. Please number all pages of your submittal. (Note: Numbering of these instructions follows the UPCF data element numbers on the form.)

- 606. UNIT ID NUMBER Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification Unit form).
- 1. FACILITY ID NUMBER This space is for agency use only.
- 630. WASTE AND TREATMENT PROCESS COMBINATIONS (PBR) -

Use this page only for a PBR unit. Check the appropriate boxes to indicate the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for the CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Technology	Vendor	Cert. #	Effective Date	Tier	Description
Neutralex	Scigen	97-01-0024	629/97	CESW	Batch treatment for 10 percent Formalin
	333 East Gardena Blvd.		(expires 6/29/00)		generated by medical, educational, and
İ	Gardena, CA 90248				laboratory facilities. Chemically treats in a
					provided 8 liter vessel. After testing, allows
	<u> </u>				for disposal to sanitary sewer.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.

UPCF hwfphr (1/99) - 2/2

www.unidocs.org

Process Description Collection and Treatment of Acidic and Alkaline Waste Molecular Foundry Nanofabrication Facility November 29, 2007

The waste collection and treatment system for the Molecular Foundry will process acid and alkaline waste from the wet process stations located on the second level, Nanofabrication Facility. In general, the wet process stations are used for etching and rinsing wafers. Etching removes the portions of the wafer that are not needed for that application. Wafers will vary in size from 4" to 8" in diameter, and multiple wafers may be handled in wafer "carriers" that stack the wafers vertically. The wafers come to the wet process station after having been coated, exposed and developed. Etching consists of placing the wafer into the container (tank, beaker or watch glass) of etchant, allowing the etchant to erode the substrate, and then stopping the operation by rinsing in water. Rinsing consists of filling the rinse tank with water, draining it, and refilling and draining multiple times, each time the rinse water contains less etchant (typically three cycles are used).

Periodically the etchant will need to be changed, which consists of removing the acid or alkaline etchant from the tank/beaker/watch glass using a water aspirator, and then refilling with fresh etchant.

Initially there will be two wet process stations connected to the collection and treatment system – one in which acidic etchants are used, and one in which alkaline etchants are used. The acidic etchants station contains two tanks in which the etchant is placed, and two separate rinse tanks. The alkaline etchants station contains one tank in which the etchant is placed, and one separate rinse tank. In addition, wet process stations include open benchtops in which small procedures may take place in beaker or watchglass size quantities, and has an open lab sink as well.

Acidic etchants that may be used include but are not limited to the following:

- Hydrochloric acid (concentrated) (pKa = -7)
- Hydrofluoric acid (concentrated or 10% as Buffered Oxide Etchant) (pKa = 3.2)
- Nitric acid (concentrated) (pKa = -2)
- Phosphoric acid (concentrated) (pKa = 2.15)
- Piranha etch [3:1 concentrated sulfuric acid: hydrogen peroxide (typically 30%) solution]

Alkaline etchants that may be used include but are not limited to the following:

• Potassium hydroxide (approximately 40%, ~7.13 M) (pKb = <<0)

Details

Etch tanks, beakers and watch glasses are emptied using a water aspirator connected to a "stinger". The stinger is inserted into the container, and the vacuum created by the water aspirator lifts the etchant from the container, dissolves it into the running water, and sends the diluted etchant to the collection system.

The dilution ratio is a minimum 6:1 water:etchant, and can be configured higher¹. Fresh water flush follows the etchant down the collection system.

Water rinses from the rinse cycle are sent directly to the collection system from a drain at the bottom of the rinse tank.

All connections to the collection system are controlled by valves. The aspiration, flush, and rinse cycles will be automated by controllers in the wet process stations, and the wet process stations will be interlocked so that only one station can deliver acid or alkaline waste to the collection system at a time. This will assure that the collection system has been thoroughly flushed so that potentially incompatible reactions do not occur within the collection system. In addition, these controllers will be programmed to prevent any tank dump or rinse cycle if the high level switch on the waste treatment system influent surge tank is activated.

Quantities and volumes represent maximum volumes:

- ➤ Volume of etch tank with a rinse insert: 9.5" D x 7.25" L x 8" W = .319 cubic feet = 2.39 gallons.
- > Aspiration: assume water:etchant ratio of 6:1
- ➤ Post-aspiration flush: 3 pulses of 30 seconds @ 2.0 gpm, each followed by 40 seconds gravity flow, total volume = 1.5 minutes x 2.0 gpm = 3.0 gallons.
- Rinse: assume rinse tank size identical to etch tank, 3 rinses @ 2.39 gal/rinse = 7.2 gal
- Etchant dumps: assume 2/day acid, 1/day alkaline per bench, plus miscellaneous beakers of smaller quantities
- > Rinse cycles: assume 4/day per bench (multiple batches can use the same etchant)
- > Sink water: assume short duration, small quantity, deminimus relative to the programmed process flow.

Daily Average flow:

Acid: 2.39 gal x 7 (aspiration dilution) x 2/day x 1 bench =	33.5 gal
Alkali: 2.39 gal x 7 (aspiration dilution) x 1/day x 1 bench =	16.7 gal
Flush: $(3.0 \text{ gal x } 2/\text{day}) + (3.0 \text{ gal x } 1/\text{day}) =$	9.0 gal
Rinse: 7.2 gal x 4 /day/bench x 2 benches =	57.4 gal
Total	116.6 gal

Average inflow (8-hour day) = 116.6 gal/480 min = 0.243 gpm

Hourly Peak Flow: Assume that in the peak hour the following occurs:

Two acid etches, each followed by a rinse cycle

7.2 gal x 2 = 14.4 gal

One acid tank dump followed by a flush cycle

 $(2.39 \times 7) + 3.0$ 19.7 gal

One alkali etch followed by a rinse cycle

The 6:1 ratio has been assumed in these calculations as it is conservative. In all cases analyzed, a higher ratio will result in safer conditions.

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EPA ID Number: CA4890008986

 $7.2 \times 1 =$

7.2 gal

One alkali tank dump followed by a flush cycle

 $(2.39 \times 7) + 3.0$

19.7 gal 61.0 gal

Hourly process capability: $60 \text{ min } \times 5 \text{ gpm} = 300 \text{ gal exceeds peak inflow.}$

Influent pH

Influent pH will be the pH of the aspirated tank dump, considering the flush. Minimum influent pH will be for hydrochloric and nitric acids (since pKa < 0, assume complete dissociation; phosphoric and hydrofluoric (especially buffered HF) are weaker acids). Maximum influent pH will be for 40% KOH solution.

Nitric: $HNO_3 \rightarrow H^+ + NO_3^-$

Reagent grade nitric acid is approx. 70% w/v

- o D = 1.40 g/ml
- o $1.40 \text{ g/ml } \times 0.70 = 0.980 \text{ g HNO3/ml}$
- o 0.980 g/ml x 1000 ml/L x 1 mole/63.01 g = 15.56 mole/L
- o At 6:1 dilution, conc = 2.22 mol/L (Note: this translates to 10 % w/v)
- o Assume [HCl] \sim [H+] and pH = $-\log$ [H+]
- o $[H+] = 2.2, pH \sim 0$

Hydrochloric: HCl → H⁺ + Cl Reagent grade hydrochloric acid is approx. 37% w/v

- o D = 1.19 g/ml
- o $1.19 \text{ g/ml} \times 0.37 = 0.440 \text{ g HCl/ml}$
- o $0.440 \text{ g/ml} \times 1000 \text{ ml/L} \times 1 \text{ mole/} 36.465 \text{ g} = 12.07 \text{ mol/L}$
- o At 6:1 dilution, conc = 1.7 mole/L
- o Assume [HCl] \sim [H+] and pH = $-\log$ [H+]
- o $[H+] = 1.7, pH \sim 0$

Potassium Hydroxide: $KOH \rightarrow K^+ + OH^-$

- o 40% KOH = 400 g KOH/L
- o $400 \text{ g/L} \times 1 \text{ mole/} 56.095 \text{ g} = 7.131 \text{ mol/L}$
- o At 6:1 dilution, conc = 1.02 mole/L
- o Assume [KOH] \sim [OH], pOH = $-\log$ [OH] and pH = 14 p[OH]
- o [OH] = 1.02, pOH ~ 0, $pH \sim 14$

Temperature limitations

Influent temperature

Worst case is Pirhana etch @ 120°C

- o Assume etch bath = 120° C = 393° K = 248° F
- o Assume aspiration water = 13° C = 286° K = 55° F
- o Average temperature is $[(6 \times 286) + 393]/7 = 301^{\circ}K = 28.3^{\circ}C = 83^{\circ}F$
- o Assume water flush = 13° C = 286° K = 55° F

Temperature rise in influent surge tank

The worst case reasonable scenario is a discharge of Piranha solution (H_2SO_4/H_2O_2 3:1 acid) with two alkali (assume KOH) discharges and three flush cycles (flush after each discharge). A (second but more likely scenario is a discharge of two HCL solutions and one discharge of a KOH solution with three flush cycles (flush after each discharge).

Assumptions that have been made in these calculations:

- The influent surge tank contains only product and flush water, no rinse (dilute) water;
- The influent surge tank begins at a temperature of approx. 72°F (22°C, 295°K);
- There is no heat lost through the wall of the influent surge tank during any neutralization reaction; all heat generated is absorbed by the liquid;
- The molar enthalpy of neutralization for a strong acid is -58.1 kJ/mole of hydrogen ion and 1kcal = 4.184kJ; and
- The specific heat of all liquids is assumed to be the same as pure water, ie, 1°C-L/kcal. The difference in specific heat between pure water and the dilute solutions considered here is deminimus.
- 1. One discharge of Piranha solution (H_2SO_4/H_2O_2 3:1 acid) with two alkali (assume KOH) discharges and three flush cycles (flush after each discharge).
 - Commercial H₂SO₄ is 18M (or 36N); a 3:1 mixture equals 13.5 M H₂SO₄. When discharged at 6:1 aspiration, H₂SO₄ concentration equals 1.93 M.
 - 16.7 gal (63.2 L) of 1.93 M $H_2SO_4 \rightarrow 122$ moles $H_2SO_4 \rightarrow 244$ moles H^+
 - 33.5 gal (126.8 L) of 1.02M KOH → 129 moles KOH
 - Heat of neutralization is limited by 129 moles of KOH; 57.5 moles of H₂SO₄ remain unneutralized
 - Followed by 3.0 gal (11.4 L) clean water flush/discharge = 34.1 L
 - 129 moles x -58.1 kJ/mole x 1 kcal/4.184 kJ = 1791 kcal liberated
 - Resultant mixture temperature without consideration of reaction heat is
 - $[(63.2 L \times 301^{\circ}K) + (126.8 L \times 295^{\circ}K) + (34.1 L \times 286^{\circ}K)]/224.1 L = 295^{\circ}K = 71.9^{\circ}F$
 - Reaction heat results in a temperature rise of
 - 1791 kcal x 1°C-L/kcal x 1.8 °F/°C x 1/224.1 L = 17.0°F

This scenario would result in a net concentration of unneutralized H_2SO_4 acid of 0.26 moles/L at a temperature of approximately (71.9+17.0)= 88.9°F. Per the IPLEX Chemical Resistance Guide, polypropylene (surge tank walls are ½" polypropylene) shows high resistance at 140°F to 37% (12M) hydrochloric acid, 85% (14.7M) phosphoric acid, 10% (1.9M) sulfuric acid, and limited resistance to 20% (4.4M) nitric acid. Resistance to the much more dilute nitric acid is anticipated to be superior to that of the more concentrated form (this is confirmed by other chemical resistance charts). The chemical resistance of polypropylene exceeds that required by the resulting unneutralized H_2SO_4 acid.

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- 2. The more typical scenario is two discharges of HCL solutions and one discharge of a KOH solution with three flush cycles (flush after each discharge).
 - 126.8 L of 2M HCl → 253.6 moles HCl
 - 63.2 L of 1.02M KOH → 64.5 moles KOH
 - Heat of neutralization is limited by 64.5 moles of KOH; 189.1 moles of HCl remain unneutralized
 - Followed by 3.0 gal (11.4 L) clean water flush/discharge = 34.1 L
 - 64.5 moles x -58.1 kJ/moles x 1 kcal/4.184 kJ = 896 kcal liberated
 - Resultant mixture temperature without consideration of reaction heat is
 - $[(126.8 \times 295^{\circ}\text{K}) + (63.2 \times 295^{\circ}\text{K}) + (34.1 \times 286^{\circ}\text{K})]/224.1 = 294^{\circ}\text{K} = 68.9^{\circ}\text{F}$
 - Reaction heat results in a temperature rise of
 - 896 kcal x 1°C-L/kcal x 1.8 °F/°C x 1/224.1 L = 7.2°F

This scenario would result in a net concentration of unneutralized HCl acid of 0.84 moles/L at a temperature of approximately $(68.9+7.2)=76.1^{\circ}F$. Per the IPLEX Chemical Resistance Guide, polypropylene shows high resistance at $140^{\circ}F$ to 37% (12M) hydrochloric acid.

Reference: John Seabury P.E. CIH, "Preliminary Process Description, Collection and Treatment of Acidic and Alkaline Waste, Molecular Foundry Nanofabrication Facility V.1.6 August 23, 2005"

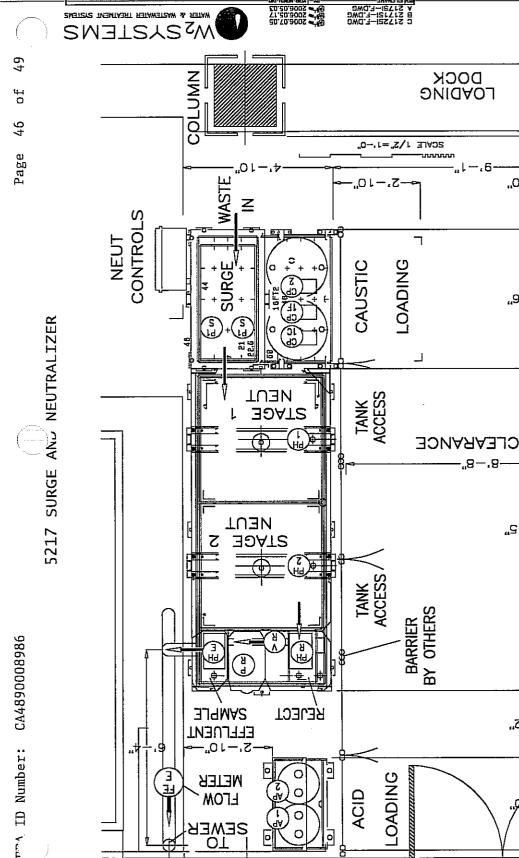


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Hazardous Waste Tank Certification – FTU-007 Nanofabrication Wastewater Treatment System Lawrence Berkeley National Laboratory Berkeley, California

Summary: The caustic wastewater treatment system for the Nanofabrication Laboratory waste (designated FTU-007) operated by Lawrence Berkeley National Laboratory (the Berkeley Lab) in Berkeley, California, meets the applicable tank standards for storage and elementary neutralization of hazardous wastes per Title 22 of the California Code of Regulations, sections 66265.190 et seq.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Steven J. Tighe, P.E.

Chemical Engineer No. CH5980

Senior Project Manager

ENSR Corporation

Date: 7/3i/67

CH 5980 EXP. 9/30/08 #

Certification Valid Through: July 31, 2012

Page⁴⁸of ⁴⁹

EPA ID Number: CA4890008986

Lawrence Berkeley National Laboratory Prior Enforcement History

Docket #: HWCA20040523

Effective date of Consent Order: 3/13/07

Agency: State of California

Environmental Protection Agency Department of Toxic Substances Control

700 Heinz Ave. Berkeley, CA 94710

Summary:

On March 13, 2007, Lawrence Berkeley National Laboratory (Berkeley Lab) received an administrative penalty of \$28,000 from the State of California's Department of Toxic Substances Control for hazardous waste violations that resulted from inspections on April 22, 2003, March 16, 2004, and June 5, 2005. Specifically, the Berkeley Lab was fined for transporting hazardous materials to an offsite warehouse, which is not authorized to accept hazardous waste. The Berkeley Lab was also fined for holding hazardous waste in a Satellite Accumulation Area for more than one year and for receiving waste at the Berkeley Lab Hazardous Waste Handling Facility from an offsite location.

14.00 A 11.00 A





STATE OF CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of:

The University of California -Lawrence Berkeley National Laboratory 1 Cyclotron Road Berkeley, California 94720

Respondent.

Docket HWCA 20040523

CONSENT ORDER

Health and Safety Code Section 25187

1. INTRODUCTION

- 1.1. Parties. The California Department of Toxic Substances Control

 (Department) and The University of California Lawrence Berkeley National Laboratory

 (Respondent) enter into this Consent Order (Order) and agree as follows:
- 1.2. <u>Site</u>. Respondent generates, handles, treats, stores, and/or disposes of hazardous waste at the following site: 1 Cyclotron Road, Berkeley, California 94720 (Site).¹
- 1.3. <u>Inspection</u>. The Department inspected the Site on April 26, 2003, March 16, 2004, and June 29, 2005.
- 1.4. <u>Authorization Status</u>. The Department authorized Respondent to manage hazardous waste by a Hazardous Waste Facility Permit (HWFP) issued in May, 1993. Respondent timely filed its application for renewal. As required by regulation, the

Respondent also operates at 2700 7th Street, Berkeley, California 94710 (LBNL-7th). The Respondent does not have a permit, certificate, registration, or interim status document to handle, treat, store and/or dispose of hazardous waste at LBNL-7th. Respondent's activities at LBNL-7th are limited to that of a hazardous waste generator.



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Lawrence Berkeley National Laboratory

Permit by Rule Annual Report

for

Building 77 FTU 006 and Building 25 FTU 002

Calendar Year 2007

Prepared by

Robert Fox 2/26/08

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Introduction:

On June 28, 2005, the City of Berkeley requested that the Lawrence Berkeley National Laboratory (Berkeley Lab) supply a report for its two Permit by Rule fixed treatment units every March 1st. This was the first request that the Berkeley Lab has received from the City of Berkeley to supply a Permit by Rule report as described in California Code of Regulations, Title 22, Section 67450.3(c)(10). According to this section of Code, this report is only required when specifically requested by the CUPA.

Below is the reporting information for two Permit by Rule Fixed Treatment Units (FTU) for FTUs located at Building 77 and Building 25

22 CCR 67450.3(c)(10)(A):

Building 77, FTU 006 and Building 25, FTU 002

22 CCR 67450.3(c)(10)(B):

Lawrence Berkeley National Laboratory One Cyclotron Road, Mail Stop 85B0198

Berkeley, CA 94720
Attention: Mr. Robert Fox

22 CCR 67450.3(c)(10)(C):

Building 77, FTU 006

Contact: Ed Tully, Ultra High Vacuum Cleaning Facility

Supervisor, (510) 486-5907

Building 25, FTU 002

Contact: Ed Tully, Ultra High Vacuum Cleaning Facility

Supervisor, (510) 486-5907

22 CCR 67450.3(c)(10)(D):

Lawrence Berkeley National Laboratory

One Cyclotron Road Berkeley, CA 94720

22 CCR 67450.3(c)(10)(E):

US EPA ID Number: CA 4890008986

22 CCR 67450.3(c)(10)(F):

Building 77, FTU 006

Operated 101 days in calendar year 2007.

Building 25, FTU 002

Operated 11 days in calendar year 2007.

22 CCR 67450.3(c)(10)(G):

Building 77, FTU 006

31,537 gallons of aqueous acidic waste containing metals and aqueous alkaline waste were treated in calendar year 2007.

Building 25, FTU 002

5,930 gallons of aqueous acidic waste containing metals were

treated in calendar year 2007.

22 CCR 67450.3(c)(10)(H):

Building 77, FTU 006

Aqueous waste and sludge containing metals listed in 22CCR 66261.24(a)(2), hazardous due to metals content and pH.

Building 25, FTU 002

Aqueous waste and sludge containing metals listed in 22CCR 66261.24(a)(2), hazardous due to metals content and pH.

22 CCR 67450.3(c)(10)(I):

Building 77, FTU 006

The treatment methods used include: metals precipitation, pH adjustment, sludge dewatering, and sludge drying.

Building 25, FTU 002

The treatment methods used include: metals precipitation, pH adjustment, and sludge dewatering.

22 CCR 67450.3(c)(10)(J):

Building 77, FTU 006

31,537 gallons of aqueous acidic waste containing metals and aqueous alkaline waste were treated in calendar year 2007.

Building 25, FTU 002

5,930 gallons of aqueous acidic waste containing metals were

treated in calendar year 2007.

22 CCR 67450.3(c)(10)(K):

Building 77, FTU 006

No dried sludge containing metals was sent for disposal in

calendar year 2007.

Building 25, FTU 002

22.68 kilograms of dewatered sludge containing metals was sent for disposal in calendar year 2007. (Reference: Container

C140554, HWHF receipt date: 7/24/07

22.68 kilograms of filter bags and tubes with traces of sludge containing metals were sent for disposal in calendar year 2007. (Reference: Container C138857, HWHF receipt date: 5/8/07)

UNIVERSAL WASTE GENERATOR REPORTING FORM

(Please see *Universal Waste Reporting Requirements* sheet for explanation and abbreviations.)

Facility Name and Address: E.O. Lawrence Berkeley National Laboratory					
One Cyclotron Road, Berkeley CA 94720					
EPA ID# (required for LQHUWs, and UW Dismantlers and Processors):					
Reporting Period: Calendar Year ²⁰⁰⁷ ; January 1 through December 31					

All	quantities of the following Universal Wastes must be reported:	Pounds per Year
1.	Batteries	4315.1 lbs
2.	Fluorescent bulbs*	95,500 linear ft
3.	Other mercury containing bulbs	
4.	Cathode ray tubes (CRTs, televisions and computer monitors that are not flat screened)	2,236 lbs
5.	Plasma and LCD televisions	
6.	Consumer electronic devices (including cell phones, telephones, pagers and computer equipment)	31,737 lbs
7.	Dental amalgam wastes	
8.	Nonempty aerosol cans	·
9.	Mercury thermometers	68.2 lbs
10.	Mercury switches (including vehicle switches)	16.3 lbs
11.	Mercury thermostats	
12.	Mercury pressure or vacuum gauges	
13.	Mercury-added novelties (i.e. lighted shoes)	
14.	Mercury counterweights and dampers	
15.	Mercury-added dilators and weighted tubing	
16.	Mercury-added rubber flooring	
17.	Mercury gas-flow regulators	
	Annual Throughput-Total Pounds:	38,372.6 lbs

^{*} Fluorescent bulb generation may be reported in feet, but please indicate the units used.

Please note that this information is for both LBNL and for its satellite location at 717 Potter Street.

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Emergency Response Plan/Contingency Plan

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The following items are elements of a comprehensive emergency response/contingency plan that meets state requirements. If your facility has a written plan, or if you are to prepare one, make sure all the elements listed are covered by your plan. Small facilities with simple operations may complete the boxes below to be in compliance with the written emergency plan requirement. Please submit a copy of your written response plan or complete and submit this form.

I. Facility Information

Facility Name: E.O. Lawrence Berkeley	Phone: (510) 486-5514		
Address: One Cyclotron Road			
City: Berkeley Zip: 94720			

II. Emergency Coordinators

Primary Coordinator	Secondary Coordinator
Name: Emergency Contact Team	Name: Rocky Saunders
Title: LBNL 24/7 Emergency Contact Team	Title: Emergency Services Manager
Work Phone: Non-emergency (510) 486-4050	Work Phone: (510) 486-7032
After hours Phone: Emergency (510) 486-6999	After hours Phone: (510) 812-1517 cell
Pager:	Pager:

III. Emergency Telephone Numbers and Arrangements

The emergency coordinator shall immediately notify the following whenever a release, fire, or explosion threatens human health or the environment:

Agency	Phone
Fire Department	911
State Office of Emergency Services (OES)	1-800-852-7550
City of Berkeley Toxics Management Division	(510) 981-7460 or 911
Hospital/Medical Center (if injuries)	Alta Bates Hospital (510) 204-1303
EBMUD Waste Water Treatment Facility (if to sewer)	(510) 287-1651
Hazardous Waste Contractor (if clean up needed)	Onyx (800) 325-2382
Bay Area Air Quality Management District	(800) 334-6367 or (415) 771-6000
Other agencies:	

Arrangements: (Please check one box)	
☐ We have no formalized written agreements with any emergency response agency or con	tractor.
☑ We have formalized written agreements with LBNL participates in the State Mutual Aid Agr	eement
Telephone: for emergency response.	e e e e e e e e e e e e e e e e e e e

IV. Earthquake Response

Identify the areas and/or mechanical equipment or other systems that could require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.

Areas/equipment identified to be inspected immediately after an earthquake:	Damage Assessment Teams under the auspices of the Lab's Emergency Operations Center prioritize areas for earthquake response. Areas or equipment generally vulnerable to earthquake-related ground motion include chemical storage areas/cabinets, gas cylinders and dewars, waste collection and storage areas, cold storage and water systems.
	collection and storage areas, cold storage and water systems.

Emergency Response Plan/Contingency Plan

Page 2 of 3

V. Emergency Equipment Inventory Table

EQUIPMENT		Equipment	Location*	Description**
CATEGORY	7	if these are provided		
Personal Protective	 	Chemical Protective Boots		· :
Equipment, Safety Equipment,	1	Chemical Protective Gloves		
First Aid Equipment	1	Safety Glasses/Goggles/Face shields		
	1	Chemical Protective Clothing		
	/	Hard Hats		
	✓	Chemical Monitoring Equipment (describe)		
e e e e e e e e e e e e e e e e e e e	✓	First Aid Kits		
	1	Eye Wash Stations		
	\	Safety Showers		
	✓	Cartridge Respirators and Cartridges (describe)		
	✓	Self-Contained Breathing Apparatus (SCBA)		
·		Other (describe)		
Fire Extinguishing		Fire Extinguishers		The Lab's Fire Dept maintains haz mat response
Systems	✓	Automatic Fire Systems	1 to 1 to	equip set forth in Alameda County Haz Mat Plan.
en en en en en en en en en en en en en e		Fire Alarm Boxes		All bldgs have extinguishers, detectors, sprinklers
Spill Control Equipment,	1	Absorbents, Neutralizers (describe)	**	
Decontamination Equipment	√	Shovels/Brooms/Squeegees		Fire Dept and Waste Accumulation Areas
	1	Overpack drum/Spill drum		(WAAs) maintain appropriate equipment
	✓	Berms/Dikes (describe)		
and the second second second	1	Decontamination Equipment (describe)		
- ·	1	Gas cylinder leak repair kits (describe)		
		Other (describe)		
Communications and	√	Telephones		A site-wide communications system is
Alarm Systems	1	Intercoms/PA systems		maintained and connected to the Fire Dep
	✓	Portable 2 way radios		Dispatch. Radios are supplied to each
		UST leak detection monitors		member of the Building Emergency Teams
	✓	Chemical alarms (describe)	:	1 1 3
Additional Equipment (Use additional pages if needed)	✓	Emergency Rescue Boxes containing various emergency response equipment.	26 locations throughout site	

^{*} If appropriate, use the location code(s) from your Hazardous Materials Business Plan.

^{**} Describe the equipment, such as type and quantity, and its capabilities. If applicable, specify any testing/maintenance procedures/intervals.

Emergency Response Plan/Contingency Plan

Page 3 of 3

VI. Evacuation Information:

Evacuation Announcement	✓ Bell ✓ PA System Other Building Emergency Teams ✓ Horn ✓ Shouting			
Evacuation Route	✓ Map Other Site and Building Evacuation Plans			
Assembly Area	Location: Per each building plan			
Re-entry Procedures	Guidelines set forth in Master Emergency Program Plan			

VII. Emergency Procedures:

Emergency Coordinator Responsibilities:

- 1. Whenever there is an imminent or actual emergency situation such as a explosion, fire, or release, the emergency coordinator (or his/her designee when the emergency coordinator is on call) shall:
 - a. Identify the character, exact source, amount, and aerial extent of any released hazardous materials.
 - b. Assess possible hazards to human health or the environment that may result from the explosion, fire, or release. This assessment must consider both direct and indirect effects (e.g. the effects of any toxic, irritating, or asphyxiating gases that are generated, the effects of any hazardous surface water run-off from water or chemical agents used to control fire, etc.).
 - c. Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel.
 - d. Notify appropriate local authorities (i.e., call 911).
 - e. Notify the State Office of Emergency Services at 1-800-852-7550.
 - f. Monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment shut down in response to the incident.
 - g. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility.
- 2. Before facility operations are resumed in areas of the facility affected by the incident, the emergency coordinator shall
 - a. Provide for proper storage and disposal of recovered waste, contaminated soil or surface water, or any other material that results from a explosion, fire, or release at the facility.
 - b. Ensure that no material that is incompatible with the released material is transferred, stored, or disposed of in areas of the facility affected by the incident until cleanup procedures are completed.
 - c. Ensure that all emergency equipment is cleaned, fit for its intended use, and available for use.
 - d. Notify the Cal/EPA's Department of Toxic Substances Control and the City of Berkeley Toxics Management Division that the facility is in compliance with requirements 2-a and 2-b, above.

Special site specific procedures:

Emergency			Response	Action				
Hazardous Material & Hazardous Waste Spills/Releases:		Procedures included in the State of Calif Dept of Toxic Substances Control, Part B Permit, and Alameda County Haz Mat Plan						
Fire	17	11	11	II				
Explosion	lf	п	TI.	п				
Earthquake	н	If	· II	n				
Other								

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Employee Training Plan

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1.	Scope	•			Teach lie	etata tito ori	100	$\mathcal{I} = (x \in \mathcal{A}(x))$
This	plan is designed to	provide em	ployees with tra	aining on hazardo	us materials	and hazardous	s waste tha	t will satisfy
the re	equirements of the	California H	ealth and Safety	Code Chapter 6.9	95 and Chapt	er 6.5.	11.11	

	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de
Facility Name:	E.O. Lawrence Berkeley National Laboratory
Address:	One Cyclotron Road, Berkeley CA 94720
Main Activity:	Scientific Research
Building or Areas	See Appendix B
where hazardous	
materials/wastes are found:	
2. Responsibilities	

The following persons are responsible for ensuring that this Training Plan is implemented:

	TARRITO' LICIO		Training Responsibility	
Don Lucas			EH&S Division Deputy	
10年1		gia and a first of a		

3.	Employees/New Employees				
New	employees are trained during orientation, before starting on a jo	b? ☑	YES		NO
New waste	employees who handle hazardous waste are trained in hazardou e management within six months of hire date?	s · · · · · · · · · · · · · · · · · · ·	YES		NO
		· · · · · · · · · · · · · · · · · · ·			
4.	New Assignments or Changes in Operations				
emple	e event of new assignments or of changes in operation, affected oyees are trained before the new assignment or the change in ation takes place.) YES		NO
opera				** 1 T.:	* 4*
			100	11.	

5. Refresher Training

Refresher t	raining will be provide	d <u>as</u>	needed The method used will be: (check all that apply)
Ø	Outside classes	Ø	In-house classes provided by contractor
\square	Safety meetings	Ø	In-house classes conducted by in-house trainers

6. Training Topics

The following table indicates the training topics covered for this facility, as indicated with a \square . Other documentation on these training topics is maintained and are available to the inspector upon request.

All emp	loyees are trained to do the following procedures, as appropriate:
Ø	1. Initiate, activate, or recognize internal alarms and other emergency announcements.
☑	2. Notify internal or on-site emergency responders listed in the emergency response/contingency plan.
Ø	3. Notify agencies listed in the emergency/contingency plan.
Ø	4. Locate and review contents of written emergency response/contingency plan.
7	5. Initiate, conduct, or follow evacuation procedures as described in the emergency response/contingency plan.
Hazard	ous materials/waste handlers are additionally trained in the following subjects:
	1. Safe methods for handling and storage of hazardous materials and hazardous waste.
	2. Locations and proper use of personal protective equipment.
	3. Locations and proper use of fire and spill control equipment.
4	4. Specific hazards of each chemical or waste to which they may be exposed, including the pathways of exposure (i.e. skin absorption, inhalation, ingestion).
☑	5. Follow emergency procedures for chemical/waste spills, earthquake, fire, and/or medical emergencies as described in the emergency response/contingency plan.
Ø	6. Hazardous waste handlers/managers are also trained in all aspects of hazardous waste management specific to their job duties (e.g. accumulation time, storage period, labels, inspection of containers and storage areas, uniform hazardous waste manifests, etc.)

7. Emergency Response Team

This facil	ny has a formany organized Emergency Response Team.
Emergency Response Team members are additionally trained for the following activities:	
	1. Personnel rescue procedures.
	2. Shutdown of operations.
	3. Liaison with emergency response agencies.
7	4. Use, maintenance, and replacement of emergency response equipment.
Ø	5. Emergency response drills are conducted, at least (specify frequency) [] times a year.
	6. Refresher training is provided, at least annually.

8. Recordkeeping

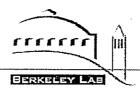
Employee training and other records are to be maintained at the facility. These include the following:

Ø	1. Record of training for each employee (date and duration of training, subject matter covered, instructor, etc.).
Ø	2. Training records of current and former employees. (For current employees, records are to be retained until closure of the facility. For former employees, training records are to be retained for at least 3 years after termination of employment.
Ø	3. Description of introductory and continuing training programs for each employee classification.
Ø	4. Current emergency response, contingency, and/or spill response plan (for underground or aboveground tanks).
Ø	5. Description and documentation of emergency response drills.
	6. Record of reportable/recordable accidental releases of hazardous material/waste.
Ø	7. Record of inspections of hazardous material/waste storage areas.
	8. Record of daily inspection of hazardous waste tanks.
	9. Inspection procedures for identified earthquake-sensitive areas and systems in the facility.

Note: The above list does not necessarily include every type of record required to be maintained by your facility.

Institutional computer database; contact Jack Salazar Training records are maintained in the following location: (486-6571) for more information.

717 POTTER STREET BUILDING 977



February 29, 2008 DIR-08-019

Mr. Nabil Al-Hadithy City of Berkeley Toxics Management Division 2118 Milvia Street Berkeley, CA 94704

Dear Mr. Al-Hadithy:

We are enclosing the Lawrence Berkeley National Laboratory's (LBNL's) "Hazardous Materials Business Plan" to cover activities in the leased space at 717 Potter Street (Building 977). LBNL occupies approximately 75% of the assigned space (~72,000 square feet) within Building 977 consisting of research laboratories and support space.

Please note the following with respect to the enclosed documents:

Berkeley Lab is a federal facility owned by the Department of Energy (DOE). In certain areas of environmental regulation, Congress has directed federal facilities to comply with state and local requirements and pay reasonable service charges. In the area of hazardous materials planning and reporting, however, while DOE facilities must comply with federal Emergency Planning and Community Right-to-Know Act (EPCRA) requirements pursuant to an Executive Order, no waiver of federal sovereign immunity from state and local regulation has occurred. Despite the lack of a sovereign immunity waiver, LBNL voluntarily complies with state requirements for hazardous materials planning and reporting. The attached report provides the information required by the state regulations.

- (1) Hazardous materials are reported if they meet or exceed state thresholds, aggregated by building.
- (2) Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Heath Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category.

(3) Hazardous waste reporting also is consistent with state requirements.

We trust that this information will assist your office in serving the needs of the community regarding hazardous material disclosure information.

Please feel free to contact Jack Salazar (510) 486-6571 directly should you have any questions or wish to discuss this matter further.

Sincerely,

Howard K. Hatayama

Division Director

Environment, Health and Safety Division

HKH/JJS/jjw

Enclosures

cc: Kim Abbot, U.S. Department of Energy, Berkeley Site Office
Dan Lunsford, Berkeley Lab Emergency Management
Ron Pauer, Berkeley Lab Environmental Services Group Leader
Paul Blodgett, Berkeley Lab Health & Safety Deputy
Nancy Rothermich, Berkeley Lab Waste Management Group Leader
Greg Seaman, Building Manager 717 Potter Street



City of Berkeley, Toxics Management Division 2118 Milvia Street, Suite 300 Berkeley, CA 94704 (510) 981-7460 FAX (510) 981-7470

For Dept Use Only - Log In/Date Stamp

Hazardous Materials Business Plan (HMBP) Certification Statement

I. IDENTI	FICATION					
FACILITY ID #	The state of the s					
RUSINESS NAME (Same as Facility Name or DBA Doing Business Ac)	3					
BUSINESS NAME (Same as Facility Name or DBA-Doing Business As) E.O. Lawrence Berkeley National Laboratory Buildi	ng 977-Berkeley West Biocenter					
717 Potter Street	103					
CITY Berkeley	CA ZIP CODE 94710 - 2722					
II. CERTIFICAT	ON STATEMENT					
Check the appropriate boxes below and sign the certifica						
 INITIAL SUBMITTAL: This new HMBP is being New facility Change of ownership Change of business address ANNUAL CERTIFICATION: I have personally r 	submitted for the following: eviewed the HMBP currently on file with your agency, dated					
 A copy of the facility's most current Business this certification form. The facility has not begun handling any hazar on the most recently submitted Hazardous Mat There have been no significant changes (100 reported hazardous materials/hazardous wast Materials Inventory forms. The facility's annual waste amounts report Inventory forms are accurate and expected to b This certification is not being made to me (EPCRA requires complete annual submission 11022). ✓ CERTIFICATION OF CHANGES/REVISIONS: 	IMBP submission is complete, accurate and up to date. Owner/Operator Identification page is being submitted with dous materials/hazardous wastes that are not currently listed erials Inventory forms. 'h' increase or decrease) in the quantities of any previously es as reported on the most recently submitted Hazardous ed on the most recently submitted Hazardous Materials					
hereby certify, under penalty of perjury, that the information contained in this Hazardous Materials Business Plan is, to the best of my knowledge, true and correct. I understand that I will be required to show proof of compliance during any facility inspection conducted by City, County, State, or Federal authorities. I understand that whenever there are changes in address, ownership, pusiness name, or operations (closure, addition of undisclosed hazardous materials or hazardous wastes, and/or contingency planning provisions), a notification of such must be made to the Toxics Management Division within 30 days of the change. BATE DATE						
NAME OF SIGNER (print)	February 29, 2008					
Howard Hatayama	Director, EH&S Division					
Agency Use Only	ter sent					
HMBP ACCEPTED:/ BY:						



lanning and Development Department Toxics Management Division

SPECIAL HAZARDS REGISTRATION

According to BMC Title 15, the following special hazards require registration and compliance with the ordinance. For copies of the compliance requirements, please contact your inspector for a copy of the ordinance.

Facility Name: E.O. Lawrence Berkeley National Laboratory – Offsite Bldg. 977

Facility Address: 717 Potter Street, Berkeley, CA 94710 Phone: 510-486-5099

I. Etiological Agents Disclosure:

Etiological agents can be microorganisms which cause disease. The BMC defines an etiologic agent as any of the following:

- An infectious substance, which is any viable microorganism, or its toxin, which causes or may cause disease in humans or animals, and includes those agents listed in 42 CFR Section 72.3 or the regulations of the Department of Health and Human Services, or any other agent that causes or may cause severe, disabling or fatal disease;
- A diagnostic specimen, which is any human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids, being handled for purposes of diagnosis;
- 3 A biological product, which is any material prepared and manufactured in accordance with the provisions of 9 CFR parts 102, 103, or 104, or 21 CFR parts 312 or 600-680; and
- 4 A medical waste as defined in California Health and Safety Code Section 25023.2.

If your facility stores or handles an etiological agent on site, you must report the agent name, quantity and storage location to the Toxics Management Division.

Biological materials present at this building are either Risk Group 1 or Risk Group 2 materials and are handled at either Biosafety Level 1 (e.g., standard LBNL lab) or Biosafety Level 2 containment (e.g., lab with biosafety cabinet), respectively. Risk Group 1 materials are not associated with disease in healthy adult humans, while Risk Group 2 materials are associated with human disease that is rarely serious and for which interventions are often available. Common biological materials include Risk Group 1 microorganisms, established human cell cultures, attenuated (e.g., replication deficient) viral vectors, and very limited samples of human tissue. Some medical waste as defined by California Health and Safety Code 25023.2 is generated. One operation uses a limited quantity and number of Risk Group 2 human pathogens (e.g., bacteria). Diagnostic specimens, biological products, Risk Group 3 agents, Risk Group 4 agents, and select agents are not used.

II. Radioactive Materials:

Any quantity of Radioactive Materials must be reported on the Hazardous Materials Inventory-Chemical Description page of the Hazardous Materials Business Plan.

Radioactive materials reporting is consistent with state requirements. State requirements provide for reporting of radioactive materials that are handled in quantities for which an emergency plan would be required according to the Nuclear Regulatory Commission (NRC) or the State of California, Department of Health Services (DHS) regulations. There are no radioactive materials at LBNL for which such an emergency plan would be required. All radioactive materials, including those in mixed waste, have been considered for this reporting category

City of Berkeley, Toxics Management Division UNIFIED PROGRAM CONSOLIDATED FORM - FACILITY INFORMATION BUSINESS ACTIVITIES

	I. FACILITY IDE	NTTTTT	TION	rage or
FAC	ILITY ID#	ATTITICA		DAID#GIIWC-1
				PA ID # (Hazardous Waste Only) CAR000161679
BUS	INESS NAME (Same as Facility Name or DBA-Doing Business As) D. Lawrence Berkeley National Laboratory - Berke	lov Most E		3
<u> </u>				ər
	II. ACTIVITIES I			
	NOTE: If you check YES			
	please submit the Business Owner/Operato	or Identifica	ation pag	ge (OES Form 2730).
Α Ι	Does your facility HAZARDOUS MATERIALS	! If	Yes, please	complete these pages of the UPCF
Have for I (incl quar App	e on site (for any purpose) hazardous materials at or above 55 gallons iquids, 500 pounds for solids, or 200 cubic feet for compressed gases ude liquids in ASTs and USTs); or the applicable Federal threshold tity for an extremely hazardous substance specified in 40 CFR Part 355, endix A or B; or handle radiological materials in quantities for which an	✓ YES 🗀	NO 4	HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731)
eme	rgency plan is required pursuant to 10 CFR Parts 30, 40 or 70?			
B. U 1. 2.	NDERGROUND STORAGE TANKS (USTs) Own or operate underground storage tanks? Intend to upgrade existing or install new USTs?	YES /	NO 5 NO 6	UST FACILITY (Formerly SWRCB Form A) UST TANK (one page per tank) (Formerly Form B) UST FACILITY UST TANK (one per tank) UST INSTALLATION - CERTIFICATE OF
3.	Need to report closing a UST?	☐ YES 🗸	NO 7	COMPLIANCE (one page per tank) (Formerly Form C) UST TANK (closure portion -one page per tank)
	Own or operate ASTs above these thresholds:any tank capacity is greater than 1,320 gallons, orthe total capacity for the facility is greater than 1,320 gallons?	☐ YES 📝	NO 8	NO FORM REQUIRED TO CUPAs
1. 2. 3.	AZARDOUS WASTE Generate hazardous waste? Recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)? Treat hazardous waste on site?	YES D	NO to	EPA ID NUMBER – provide at the top of this page RECYCLABLE MATERIALS REPORT (one per recycler) ONSITE HAZARDOUS WASTE TREATMENT – FACILITY (Formerly DTSC Forms 1772) ONSITE HAZARDOUS WASTE TREATMENT –
4. 5.	Treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)? Consolidate hazardous waste generated at a remote site?	<u> </u>	NO 12	UNIT (one page per unit) (Formerly DTSC Forms 1772 A,B,C,D and L) CERTIFICATION OF FINANCIAL ASSURANCE (Formerly DTSC Form 1232) REMOTE WASTE / CONSOLIDATION SITE
		☐ 1E2 [V]	NO 13	ANNUAL NOTIFICATION (Formerly DTSC Form 1196)
6.	Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned onsite?	☐ YES 🗸	NO 14	HAZARDOUS WASTE TANK CLOSURE CERTIFICATION (Formerly DTSC Form 1249)
	OCAL REQUIREMENTS			
1.	Use or store hazardous materials or hazardous wastes in combined (aggregate) quantities equal to or greater than 55 gallons for liquids, 500 pounds for solids or 200 cubic feet for compressed gases?	✓YES □		HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET
 3. 	Use or store any quantity of etiological agents, radioactive materials or perchlorate materials?	YES 🗆		HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET
	Below E.I. thresholds above, but generate any quantity of hazardous waste?		NO 15	HAZARDOUS WASTE GENERATOR REPORTING PACKET
4.	Generate any quantity of Universal Waste (mercury containing devices, non-empty aerosols, electronic devices, fluorescent tubes, batteries, mercury amalgam, etc.)?	✓YES □		SEE THE UNIVERSAL WASTE REPORTING REQUIREMENTS PAGE FOR INSTRUCTIONS
5.	Generate any quantity of photochemical waste on-site (x-ray and photo imaging processors)?	☐ YES 🔽	NO 15	IF STORED ONSITE, HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION (OES 2731) OR SPREADSHEET

UPFC (Rev. 1/26/05) OES FORM (1/99)

City of Berkeley, Toxics Management Division UNIFIED PROGRAM CONSOLIDATED FORM -- FACILITY INFORMATION

BUSINESS OWNER/OPERATOR IDENTIFICATION

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BUSINESS SITE ADDRESS 717 Potter Street																					103
CITY													104	<u> </u>		ZIP CC	DE				105
Berkeley														C.	1		94		10-2722		
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COUNTY					-																108
Alameda																					
BUSINESS OPERATOR NAME					_									109	Т	BUSIN	ESS OP	ERA	TOR PHONE		110
University of California																	486-5				
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Ronald O. Pauer																(510)	486-7	61	4		
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Howard Hatayama															&S	Divis	ion				

Rev. 04/24/00

Non-Waste Hazardous Materials Inventory Statement For use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Date: 2/29/2008

Busin	ess Name:	E.O. Berkeley National	Business Name: E.O. Berkeley National Laboratory (LBNL) - Offsite Bldg. 977	Offsite Bldg. 977				L	ype of Re	Type of Report on This Page:	his Page:	Page 3 of 10	0
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	Map and Grid or			Hazardous Components (For mixtures only)		Type	O	Quantities			Storag	Storage Codes	
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	& 288C	7440-59-7			<u> </u>	Sug		- Cont	 .j				adinactive [
2.2	Labs 165	Liquid Helium			Dunc	onn:	801	55	26.4	X gadlous	ambient	nunhicut	lin
	0/1 ×3					긛				Sharands			I caretive
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ć													
;	Labs 272 & 276	nelium				pure mixture	006,1	775	218	spunnd	amhicut > amh.	ambicut > amb	fire
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		/-6C-04+/			<u>.</u>	1			<u> </u>				radionetive
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mable						nixlure				Januards Car. fibra		, v	reactive
Gars)								ā	Storage	silon [<u>;</u>		
		CAS No.: Elis				liquid (1)	(dalparelike)	365				; [chronic lealth
		0-1-1-22]									The control of the co
3.2 (with	2nd floor	Assorted, pure Flammable Liquids - AGGREGATE				pure mixture	144	120	<u> </u>	supports brounds		amhient > arah.	K line reactive
≩		SUM				solid	Curies:		Slurage	15 15	□ < annth.	High High	pressure release
		CAS No.:				_		365	Container:			Cryngenie	cluonic lealth
li		See attached 12 page list				Stra							Truthourtive
* Code *		Code Stornge Type Steel Drinn	Code Storage Type G Carboy	Code Storage Type J Bag	Cade Storage Type M Glass Budfe o	Stornge Type Glass Buite or lae	- Code	Code Storage Type P Tank Wagon		IFEPCR	If EPCRA, sign below:	V:	
2	Belovgenund Task	ak E Phanic/Non-metallic Dynm	=			Plastic Bottle or Jug	. ວ	Ruil Cur					
ວ	Tauk Inside Building		I Fiber Dium	L Cylinder		; =	* æ	Other					
							:						

Emergency Response Plan/Contingency Plan

Page 1 of 3

The following items are elements of a comprehensive emergency response/contingency plan that meets state requirements. If your facility has a written plan, or if you are to prepare one, make sure all the elements listed are covered by your plan. Small facilities with simple operations may complete the boxes below to be in compliance with the written emergency plan requirement. Please submit a copy of your written response plan or complete and submit this form.

I. Facility Information

Facility Name: E.O. Lawrence Berkeley National Laboratory, Bldg 977 (offsite)	Phone: (510) 486-5099
Address: 717 Potter Street	
City: Berkeley	Zip: 94710-2722

II. Emergency Coordinators

Primary Coordinator	Secondary Coordinator
Name: Emergency Contact Team	Name: Rocky Saunders
Title: LBNL 24/7 Emergency Contact Team	Title: Emergency Services Manager
Work Phone: Non-emergency (510) 486-4050	Work Phone: (510) 486-7032
After hours Phone: Emergency (510) 486-6999	After hours Phone: (510) 812-1517 cell
Pager:	Pager:

III. Emergency Telephone Numbers and Arrangements

The emergency coordinator shall immediately notify the following whenever a release, fire, or explosion threatens human health or the environment:

Agency	Phone Park Control of the Control of
Fire Department	911
State Office of Emergency Services (OES)	1-800-852-7550
City of Berkeley Toxics Management Division	(510) 981-7460 or 911
Hospital/Medical Center (if injuries)	Alta Bates Hospital (510) 204-1303
EBMUD Waste Water Treatment Facility (if to sewer)	(510) 287-1651
Hazardous Waste Contractor (if clean up needed)	Onyx (800) 325-2382
Bay Area Air Quality Management District	(800) 334-6367 or (415) 771-6000
Other agencies:	

Arrangements: (Please check one box)

- ☐ We have no formalized written agreements with any emergency response agency or contractor.
- We have formalized written agreements with LBNL participates in the State Mutual Aid Agreement Telephone: (510) 486-9911 for emergency response.

IV. Earthquake Response

Identify the areas and/or mechanical equipment or other systems that could require immediate inspection or isolation because of their vulnerability to earthquake related ground motion.

to be inspected immediately	Damage Assessment Teams under the auspices of the Lab's Emergency Operations Center prioritize areas for earthquake response. Areas or equipment generally vulnerable to earthquake-related ground motion include chamical storage ground applications.
	include chemical storage areas/cabinets, gas cylinders and dewars, waste
	collection and storage areas, cold storage and water systems.

Emergency Response Plan/Contingency Plan

Page 2 of 3

V. Emergency Equipment Inventory Table

EQUIPMENT	Equipment	Location*	Description**
CATEGORY	✓ if these are provided		
Personal Protective	Chemical Protective Boots	Labs	In some spill kits as appropriate for the area
Equipment, Safety Equipment,	Chemical Protective Gloves	All labs	Nitrite.
First Aid Equipment	Safety Glasses/Goggles/Face shields	All labs	ANSI rated with side shields.
	Chemical Protective Clothing	All labs	Lab coats. Some plastic and rubber aprons.
	Hard Hats	Bldg Mgr	More than 4.
	Chemical Monitoring Equipment (describe)	None on site	Industrial Hygiene services always available from LBNL.
a managaran	First Aid Kits	Outside labs	P lus portable trauma kits in break rooms (289L & 111) and mail rooms (152 & 225A).
	Eye Wash Stations	In labs	See evacuation maps for locations.
and the second second	Safety Showers	in labs	See evacuation maps for locations.
1	Cartridge Respirators and Cartridges (describe)	None on site	Industrial Hygiene services always available from LBNL.
	Self-Contained Breathing Apparatus (SCBA)	None on site	Industrial Hygiene services always available from LBNL.
	Other (describe)		The Fire Dept at Bidg 48 maintains haz material response capability/ equipment.
Fire Extinguishing Systems	Fire Extinguishers	Main corriders	Located throughout the bldgs (see evacuation maps).
systems	Automatic Fire Systems	Throughout	Fire detectors and sprinklers throughout.
	Fire Alarm Boxes	At exit doors	Including main internal corridor exits.
Spill Control Equipment, Decontamination	Absorbents, Neutralizers (describe)	Labs	In spill kits.
Equipment	Shovels/Brooms/Squeegees	Labs	Brooms only.
the second secon	Overpack drum/Spill drum		Fire Dept & Waste Accumulation Areas (WAAs) maintain appropriate equipment
	Berms/Dikes (describe)	Labs	In spill kits.
	Decontamination Equipment (describ	e) Labs	Safety showers and eye washes
	Gas cylinder leak repair kits (describe	e) Bldg Mgr	Teflon tape, wrenches, soap for testing
:	Other (describe)		and the second second second
Communications and Alarm Systems	Telephones	Throughout	A site-wide communications system is maintained and connected to Fire Dpet Dispatch.
tiai iii Systems	Intercoms/PA systems		
•	Portable 2 way radios	Bldg Mgr	Security Guard also.
	UST leak detection monitors	,	
	Chemical alarms (describe)		
Additional Equipment Use additional pages if needed)			

^{*} If appropriate, use the location code(s) from your Hazardous Materials Business Plan.

^{**} Describe the equipment, such as type and quantity, and its capabilities. If applicable, specify any testing/maintenance procedures/intervals.

Emergency Response Plan/Contingency Plan

Page 3 of 6

VI. Evacuation Information:

Evacuation Announcement	Bell ✓ Horn	PA System ✓ Shouting	Other Building Emergency Teams
Evacuation Route	✓ Map	Other_Site	and Building Evacuation Plans
Assembly Area	Location: To	north of building a	s designated on the attached map.
Re-entry Procedures	Only as authorize	ed by the incident comm	ander/fire department.

VII. Emergency Procedures:

Emergency Coordinator Responsibilities:

- 1. Whenever there is an imminent or actual emergency situation such as a explosion, fire, or release, the emergency coordinator (or his/her designee when the emergency coordinator is on call) shall:
 - a. Identify the character, exact source, amount, and aerial extent of any released hazardous materials.
 - b. Assess possible hazards to human health or the environment that may result from the explosion, fire, or release. This assessment must consider both direct and indirect effects (e.g. the effects of any toxic, irritating, or asphyxiating gases that are generated, the effects of any hazardous surface water run-off from water or chemical agents used to control fire, etc.).
 - c. Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel.
 - d. Notify appropriate local authorities (i.e., call 911).
 - e. Notify the State Office of Emergency Services at 1-800-852-7550.
 - f. Monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment shut down in response to the incident.
 - g. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous materials at the facility.
- 2. Before facility operations are resumed in areas of the facility affected by the incident, the emergency coordinator shall:
 - a. Provide for proper storage and disposal of recovered waste, contaminated soil or surface water, or any other material that results from a explosion, fire, or release at the facility.
 - b. Ensure that no material that is incompatible with the released material is transferred, stored, or disposed of in areas of the facility affected by the incident until cleanup procedures are completed.
 - c. Ensure that all emergency equipment is cleaned, fit for its intended use, and available for use.
 - d. Notify the Cal/EPA's Department of Toxic Substances Control and the City of Berkeley Toxics Management Division that the facility is in compliance with requirements 2-a and 2-b, above.

Special site specific procedures:

Emergency	Response Action
Hazardous Material & Hazardous Waste Spills/Releases:	Procedures included in the State of Calif Dept of Toxic Substances Control and Alameda County Haz Ma Plan. Note, however, that no waste will be transported between 717 Potter St. and the main LBNL site. In the event of a spill, the Blackberry Gate Security (24 hrs at 486-5472) will be contact o initiate LBNL Emergency Contact Team (ECT) procedures for spill response backup and cleanup.
Fire	Call 9911
Explosion	Cali 9911
Earthquake	Call 9911. If safe to do so, check chemical storage & waste areas, including gas cylinders.
Other	Call 9911

Employee Training Plan

1. Scope

					an in the disposition of
1.	Scope			en en en en en en en en en en en en en e	
	•			in we will be a second of the second	· · · · · · · · · · · · · · · · · · ·
This 1	plan is designed to	provide employees with to	raining on hazardo	us materials and hazardous wa	ste that will satisfy
the re	quirements of the C	California Health and Safet	y Code Chapter 6.	95 and Chapter 6.5.	· · · · · · · · · · · · · · · · · · ·

Facility Name:	E.O. Lawrence Berkeley National Laboratory	_
Address:	717 Potter St, Berkeley CA 94710-2722	
Main Activity:	Scientific Research	
Building or Areas	See Appendix B	
where hazardous materials/wastes are	See pages "Non-Waste Hazardous Materials Inventory Statement".	
found:		

2. Responsibilities

The following persons are responsible for ensuring that this Training Plan is implemented:

Name/Title	Training Responsibility
Don Lucas	EH&S Division Deputy

3.	Emple	oyees/New	Emp!	loyees
----	-------	-----------	------	--------

			7
New employees are trained during orientation, before starti	YES	□ NO	
New employees who handle hazardous waste are trained in			
waste management within six months of hire date?	and the second section of the second section is a second	YES	□ NO
en en en en en en en en en en en en en e	*.*		
4. New Assignments or Changes in Operations			
In the event of new assignments or of changes in operation employees are trained before the new assignment or the cha			
operation takes place.		YES	□ NO

Refresher Training 5.

Refresher to	raining will be provide	d <u>as</u>	s needed The method used will be: (check all that apply) how often
7	Outside classes	Ø	In-house classes provided by contractor
Ø	Safety meetings	✓	In-house classes conducted by in-house trainers

6. Training Topics

The following table indicates the training topics covered for this facility, as indicated with a \square . Other documentation on these training topics is maintained and are available to the inspector upon request.

All em	ployees are trained to do the following procedures, as appropriate:
Ø	1. Initiate, activate, or recognize internal alarms and other emergency announcements.
Ø	2. Notify internal or on-site emergency responders listed in the emergency response/contingency plan.
Ø	3. Notify agencies listed in the emergency/contingency plan.
Ø	4. Locate and review contents of written emergency response/contingency plan.
Ø	5. Initiate, conduct, or follow evacuation procedures as described in the emergency response/contingency plan.
Hazard	ous materials/waste handlers are additionally trained in the following subjects:
	1. Safe methods for handling and storage of hazardous materials and hazardous waste.
Ø	2. Locations and proper use of personal protective equipment.
Ø	3. Locations and proper use of fire and spill control equipment.
Ø	4. Specific hazards of each chemical or waste to which they may be exposed, including the pathways of exposure (i.e. skin absorption, inhalation, ingestion).
Ø	5. Follow emergency procedures for chemical/waste spills, earthquake, fire, and/or medical emergencies as described in the emergency response/contingency plan.
✓	6. Hazardous waste handlers/managers are also trained in all aspects of hazardous waste management specific to their job duties (e.g. accumulation time, storage period, labels, inspection of containers and storage areas, uniform hazardous waste manifests, etc.)

7. Emergency Response Team

	ity has a formatly organized Emergency Response Team.
Emerge	ency Response: Team members are additionally trained for the following activities:
Ø	1. Personnel rescue procedures.
Ø	2. Shutdown of operations.
Ø	3. Liaison with emergency response agencies.
Ø	4. Use, maintenance, and replacement of emergency response equipment.
Ø	5. Emergency response drills are conducted, at least (specify frequency) [] times a year.
Ø	6. Refresher training is provided, at least annually.

8. Recordkeeping

Employee training and other records are to be maintained at the facility. These include the following:

	1. Record of training for each employee (date and duration of training, subject matter covered, instructor, etc.).
	2. Training records of current and former employees. (For current employees, records are to be retained until closure of the facility. For former employees, training records are to be retained for at least 3 years after termination of employment.
	3. Description of introductory and continuing training programs for each employee classification.
Ø	4. Current emergency response, contingency, and/or spill response plan (for underground or aboveground tanks).
Ø	5. Description and documentation of emergency response drills.
Ø	6. Record of reportable/recordable accidental releases of hazardous material/waste.
4	7. Record of inspections of hazardous material/waste storage areas.
Ø	8. Record of daily inspection of hazardous waste tanks.
Ø	9. Inspection procedures for identified earthquake-sensitive areas and systems in the facility.

Note: The above list does not necessarily include every type of record required to be maintained by your facility.

Training records are maintained in the following location: (486-6571) for more information.

PRODUCTION GENOME FACILITY DOE JOINT GENOME INSTITUTE 2800 MITCHELL DRIVE WALNUT CREEK, CA

February 27, 2008

Contra Costa County Health Services Department Environment Health Division 4333 Pacheco Boulevard Martinez, CA 94553

Subject: Hazardous Materials Business Plan

To Whom It May Concern:

We are enclosing our annual submittal of the Hazardous Materials Business Plan for the Production Genome Facility (PGF) located at 2800 Mitchell Drive, Walnut Creek, CA. This facility is a research laboratory dedicated to DNA sequencing and production. It is operated for the Department of Energy (DOE) by the University of California (Lawrence Berkeley National Laboratory, Berkeley, CA (Berkeley Lab)). The Berkeley Lab is responsible for environment, safety, and health of the facility.

In certain areas of environmental regulation, Congress has directed federal facilities such as Berkeley Lab to comply with state and local requirements and pay reasonable service charges. In the area of hazardous materials planning and reporting, however, while DOE must ensure that its facilities comply with the federal Emergency Planning and Community Right-to-Know Act (EPCRA) requirements pursuant to an Executive Order, no waiver of federal sovereign immunity from state and local regulation has occurred. LBNL voluntarily complies with state requirements for hazardous materials planning and reporting.

The attached report provides the information that meets the requirements of California Code of Regulations, Title 19. In summary, a review of the chemical inventory for the facility indicate that hazardous materials are in small quantities and substantially below thresholds with few exceptions. We store a maximum of 880 gallons of ethanol waste in a designated Waste Accumulation Area (WAA) outside of Building 100. In addition, we have an emergency generator with a 4000-gallon above ground storage tank containing diesel fuel that serves

Building 100 (located adjacent to Building 400). Also, within our facility there are 2,885 cubic feet of nitrogen gas (most of which is stored in the outside area at the northwest corner of Building 100). Finally, 118 gallons of ethanol are distributed to locations in Building 100, Building 310, and Building 400. All of the above amendments are detailed in the attached facility maps.

We trust that this information will assist your office in serving the needs of the community regarding hazardous material disclosure information.

Please feel free to contact our Safety Coordinator Stephen Franaszek directly at (925) 296-5807 should you have any questions or wish to discuss this matter further.

Sincerely,

James Bristow Deputy Director

Production Genomics Facility

Enclosures

SITE #770310 PRODUCTION GENOMICS FACILITY 2800 MITCHELL DR BLDG 944 WALNUT CREEK

UNIFIED PROGRAM CONSOLIDATED FORM FACILITY INFORMATION 2008 BUSINESS ACTIVITIES

Page 1 of _1									
	I. FACILITY IDENTIFICATION								
FACILITY ID # (Agency Use Only) 0 7 0 0 0 7 7 0 3 1	0	1	EPA ID	# (Hazardous					
BUSINESS NAME (Same as Facility Name of DBA-Doing Business As)				CAD04184					
E.O. Lawrence Berkeley National Laboratory					3				
BUSINESS SITE ADDRESS									
2800 Mitchell Dr.									
BUSINESS SITE CITY Walnut Creek				104 CA	ZIP CODE 105				
II. ACTIVITIES DE	CT.ARAT	יזרא			94598 .				
NOTE: If you check YES to			a liet		·				
please submit the Business Owner/Operator	rany par Identific	etton n	а цаг, ~~~ (О	TT Form	27201				
Does your facility					pages of the UPCF				
A. HAZARDOUS MATERIALS	1	11 1 Ca, pr	CHAC COTT	thiere mese	pages of the OPCF				
Have on site (for any purpose) at any one time, hazardous materials at or above				BITICINIECO	OWNIED (ODED ATOD				
55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed				IDENTIFIC	S OWNER/OPERATOR CATION				
gases (include liquids in ASTs and USTs); or the applicable Federal threshold	☑ YES	□ NO	4	HAZARDO	DUS MATERIALS				
quantity for an extremely hazardous substance specified in 40 CFR Part 355,				INVENTORY - CHEMICAL					
Appendix A or B; or handle radiological materials in quantities for which an				DESCRIPT	TION				
emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70? B. REGULATED SUBSTANCES									
Have Regulated Substances stored onsite in quantities greater than the									
threshold quantities established by the California Accidental Release	☐ YES	🖾 мо	4a	Coordinate	with your local agency				
prevention Program (CalARP)?	-	*		responsible	for CalARP.				
C. UNDERGROUND STORAGE TANKS (USTs)	·				***				
Own or operate underground storage tanks?	☐ YES	⊠ NO	5	UST FACE	LITY				
D. ABOVE GROUND PETROLEUM STORAGE		Ø 14€		UST TANK	K (one page per tank)				
Store greater than 1,320 gallons of petroleum products (new or used) in					í				
aboveground tanks or containers.	⊠ YES	□ мо	8	NO FORM	REQUIRED TO CUPAs				
	<u> </u>			May requir	e SPCC plan.				
E. HAZARDOUS WASTE Generate hazardous waste?									
Generate nazardous waste?	⊠ YES	□ NO	9	EPA ID NU this page	JMBER - provide at the top of				
Recycle more than 100 kg/month of excluded or exempted recyclable materials	<u>_</u>				DIE MATERIALE DEBORE				
(per HSC 25143.2)?	☐ YES	⊠ NO	10	(one per recycle	BLE MATERIALS REPORT				
Treat hazardous waste on-site?	☐ YES	⊠ NO	••		IAZARDOUS WASTE				
	LIES	NO INC	11	TREATME	ENT – FACILITY				
					HAZARDOUS WASTE				
Treatment subject to financial assurance requirements (for Permit by Rule					ENT – UNIT (one page per unit) ATION OF FINANCIAL				
and Conditional Authorization)?	☐ YES	⊠ NO	12	ASSURAN					
Consolidate hazardous waste generated at a remote site?	□ YES	⊠ NO	13		WASTE / CONSOLIDATION				
Need to concert the of course to concert of a sect at a trace of a section of	L	ZJ IIV	L		UAL NOTIFICATION				
Need to report the closure/removal of a tank that was classified as hazardous waste and cleaned on-site?	☐ YES	⊠ NO	14		OUS WASTE TANK CLOSURE				
Generate in any single calendar month 1,000 kilograms (kg) (2,200 pounds) or				CERTIFIC	ATTON				
more of federal RCRA hazardous waste, or generate in any single calendar	j			Ohtain fed	leral EPA ID Number, file				
month, or accumulate at any time, 1 kg (2.2 pounds) of RCRA acute hazardous					Report (EPA Form 8700-				
waste; or generate or accumulate at any time more than 100 kg (220 pounds) of	☐ YES	⊠ ио	145		nd satisfy requirements for				
spill cleanup materials contaminated with RCRA acute hazardous waste.				RCRA La	rge Quantity Generator.				
Household Hazardous Waste (HHW) Collection site?	[] VEC	⊠ NO	1.41	Con CIDA	For an exclused For				
F. LOCAL REQUIREMENTS	1 1 1 1 1 1 1 1 1 1	<u> </u>	140	See CUPA	for required forms.				
(You may also be required to provide additional info	mation by yo	ur CUPA or	local agen	ev.)	15				
				-J.,					

CONTRA COSTA HEALTH SERVICES-HAZARDOUS MATERIALS PROGRAMS

FACILITY INFORMATION 2008

BUSINESS OWNER/OPERATOR IDENTIFICATION

SITE #770310 PRODUCTION GENOMICS FACILITY 2800 MITCHELL DR BLDG 944 WALNUT CREEK

	:			Poge _1,	_1_10
I. IDENTIFICAT					
FACILITY ID# 0 7 0 0 0 7 7 0 3 1 0	BEGINNING D	ATE 100	ENDI	NG DATE	101
	01/01/08		12/31	./08	
BUSINESS NAME (Same as FACILITY NAME or DBA – Doing Business As)		3 BUSINESS	PHON	E	102
		(005) 204	: 5670	•	
Production Genomics Facility	 	(925) 296		·	102a
BUSINESS SITE ADDRESS		103 BUSINESS	rax		.024
2800 Mitchell Dr.			105	COUNTY	108
BUSINESS SITE CITY	104 CA	ZIP CODE	101		100
Walnut Creek		94598	107	Contra Costa	107a
DUN & BRADSTREET	106	PRIMARY SIC	107	PRIMARY NAICS	10/4
170143759		8731		<u> </u>	108a
BUSINESS MAILING ADDRESS					1058
1 Cyclotron Road, Mail Stop 90R1023			-T		100.1
BUSINESS MAILING CITY	1086	STATE 108c	1	CODE	108d
Berkeley		CA	947		
BUSINESS OPERATOR NAME	109	BUSINESS OPER		PHONE	110
University of California		(510) 486-551	4		
II. BUSINESS OV	VNER				
OWNER NAME	111	OWNER PHONE			112
U.S. Department of Energy - Lawrence Berkeley National Lab Site Office	P	(510) 486-435	3		
OWNER MAILING ADDRESS		(510) 100 100			113
-					
1 Cyclotron Road, Mail Stop 85B0198 OWNER MAILING CITY	114	STATE 115	l ZIP	CODE	116
		CA	947		
Berkeley	CONTRACT	CA	1 7-1	20	
III. ENVIRONMENTA	L CONTACT	CONTACT PHO	NE	· ····································	118
CONTACT NAME	117				
Ronald O. Pauer	119	(510) 486-761 CONTACT EMA			119a
CONTACT MAILING ADDRESS	IIA	CONTACTEMA	.ll_		****
1 Cyclotron Road, Mail Stop 85B0198		121	Lan	CODE	122
CONTACT MAILING CITY	120	STATE 121		CODE	.22
Berkeley		CA	947		
-PRIMARY- IV. EMERGEN	CY CONTACT	rs	-5	SECONDARY-	
NAME 123	NAME				128
Greg Stanley	Emergency Ir	cident Contact			
TITLE 124	TITLE				129
Facility Manager	Emergency Ir	cident Contact			
BUSINESS PHONE 125	BUSINESS PHO	NE			130
(925) 296-5788	(510) 486-69	99			
24-HOUR PHONE 126	24-HOUR PHO	NE			131
(925) 997-4834	(510) 486-699	99			
PAGER # 127	PAGER#				132
ADDITIONAL LOCALLY COLLECTED INFORMATION:					1 3
Number of Employees: 240 Total Pounds of H					3
Invoice Contact Name: Ron Pauer	Date of Ow	nership: 10/99			
Invoice Contact Address: One Cyclotron Road, Mail Stop 85B0198			rm .t	1 (510) 496 64	:02
217,0100 010,7	ce ZIP: 94720			ohone: (510) 486-66	
Certification: Based on my inquiry of those individuals responsible for obtaining the infor am familiar with the information submitted and believe the information is true, accurate, and	mation, I certify un ad complete.	ider penalty of law t	hat I ha	ve personally examined	l and
SIGNATURE OF OWNER/OPERATOR OR DESIGNATED REPRESENTATIVE D	ATE 1	NAME OF DOC	UMENT	PREPARER	135
	/27/08	Cheryl Chu	1		
136 T	TLE OF SIGNER				137
JAMES DE SIGNER (print)	Jaim	- D-M-	\supset		
47, 46) 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,	~	~ } 			

CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS UNIFIED PROGRAM CONSOLIDATED FORM BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY - CHEMICAL DESCRIPTION

(one page per material per building or area) 200 Page _1_ of _1_ **⊠**REVISE □ADD DELETE I. FACILITY INFORMATION 3 BUSINESS NAME (Same as FACILITY NAME or DBA - Doing Business As) Production Genomics Facility 202 CHEMICAL LOCATION CONFIDENTIAL CHEMICAL LOCATION EPCRA YES_ NO_x_ Building 100, 310, & 400 203 GRID# (optional) 204 MAP# (optional) 3 0 0 0 0 7 7 0 1 FACILITY ID# II. CHEMICAL INFORMATION 206 Yes X No TRADE SECRET CHEMICAL NAME If Subject to EPCRA, refer to instructions 208 207 COMMON NAME Regulated Substance? ☐ Yes 🔀 No Diesel Fuel *If Regulated Substance is "Yes", all amounts below must be CAS# 68334-30-5 210 FIRE CODE HAZARD CLASSES: include physical & health characteristics Class III A Combustible Liquid, Irritant 213 HAZARDOUS MATERIAL RADIOACTIVE Yes No 212 CURIES 211 🛛 a. PURE 🔲 b. MIXTURE 🔲 c. WASTE TYPE (Check one item only) 215 PHYSICAL STATE LARGEST CONTAINER 4.000 214 ☐ a. SOLID 🖾 b. LIQUID ☐ c. GAS (Check one item only) 216 FED HAZARD CATEGORIES ☐ d. ACUTE HEALTH 🗵 e. CHRONIC HEALTH ☑ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE (Check all that apply) 220 ANNUAL WASTE AMOUNT STATE WASTE CODE MAXIMUM DAILY AMOUNT AVERAGE DAILY AMOUNT N/A N/A 4,000 3,800 222 221 DAYS ON SITE: ☑ a. GALLONS ☐ b. CUBIC FEET ☐ c. POUNDS UNITS* 365 (Check one item only) * If EHS, amount must be in pounds. STORAGE \square c. PLASTIC/NONMETALLIC DRUM \square i. FIBER DRUM \square m. GLASS BOTTLE \square q. RAIL CAR ☑ a. ABOVE GROUND TANK CONTAINER ☐ n. PLASTIC BOTTLE ☐ r. OTHER ☐ f. CAN ☐ j. BAG ☐ b. UNDERGROUND TANK ☐ D. TOTE BIN □ k. BOX C. TANK INSIDE BUILDING g. CARBOY ☐ h. SILO □ 1. CYLINDER □ p. TANK WAGON 223 ☐ d. STEEL DRUM 224 □ b. ABOVE AMBIENT □ c. BELOW AMBIENT STORAGE PRESSURE ☑ a. AMBIENT 225 ☐ d. CRYOGENIC C. BELOW AMBIENT ■ a. AMBIENT □ b. ABOVE AMBIENT STORAGE TEMPERATURE CAS# HAZARDOUS COMPONENT (For mixture or waste only) Regulated Substance %WT 229 ☐ Yes ☐ No 228 226 1 233 231 ☐ Yes ☐ No 232 230 7 ☐ Yes ☐ No 236 237 235 234 3 241 ☐ Yes ☐ No 240 239 4 245 243 ☐ Yes ☐ No 244 242 5 If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information. 246 ADDITIONAL LOCALLY COLLECTED INFORMATION: Lbs. **Maximum Daily Amount in pounds:**

CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS UNIFIED PROGRAM CONSOLIDATED FORM BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

				(one	page per material per building		
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I. FACILITY INFORMATION							
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Production Genomics Facility CHEMICAL LOCATION CONFIDENTIAL 202							
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Building 100, 310,	& 400	AP# (op		GRID# (optional)	204	
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II. CHEMICAL INFORMATION							
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Ethyl Alcohol			If Subje	ect 10 EPCRA,	refer to instructions	208	
COMMON NAME	•	207	Regulated Substance	?	Yes 🗵 No	-03	
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Class IA Flammab	• •		<u>-</u>				
HAZARDOUS MATERLA	L 211 RAD	IOACT	TVE Yes No	212	CURIES	213	
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(Check one item only)	□ a. SOLID ⋈ b. LIQUID □ c. GAS 214 LAR	GE21 C			<u></u>	_ 216	
FED HAZARD CATEGO (Check all that apply)	RIES ☑ a. FIRE ☐ b. REACTIVE ☐ c. PRESSURE RELEASE ☐ d. A	ACUTE	HEALTH 🛭 e. CHR	ONIC HEA	LTH	216	
AVERAGE DAILY AMO	UNT 217 MAXIMUM DAILY AMOUNT 218 ANN	₹UAL V	VASTE AMOUNT	219 ST	ATE WASTE CODE	220	
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_	NK INSIDE BUILDING		o, TOTE BIN			ļ	
□ d. ST	EEL DRUM	R 🔲	p. TANK WAGON			223	
STORAGE PRESSURE	□ a. AMBIENT □ b. ABOVE AMBIENT □ c. BELOW	AMBI	ENT			224	
STORAGE TEMPERATI	IRE 🛛 a. AMBIENT 🔲 b. ABOVE AMBIENT 🔲 c. BELOV	₩ AMB	IENT d. CRYO	GENIC		225	
%WT	HAZARDOUS COMPONENT (For mixture or waste only)	Re	gulated Substance		CAS#		
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2 230	231		Yes No 232	ļ		233	
3 234	13:	, 🗆	Yes ☐ No 236		-	237	
4 238	23:	, 🗆	Yes ☐ No 240			241	
5 242	24:	3 🗆	Yes ☐ No 244			245	
1 -	nts are present at greater than 1 % by weight if non-carcinogenic, or 0.1 % by weight if carcia	ogenic, r	ittach additional sheets of pa	i per capturing	the required information.		
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CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS UNIFIED PROGRAM CONSOLIDATED FORM

BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY – CHEMICAL DESCRIPTION

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CAS# 7727-37-9				in lbs.	nce is "Yes	", all amounts below i	must be	
	CLASSES: include physical & health chara	cteristics					210	
Compressed Gas, I				·				
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FED HAZARD CATEGO	· · · · · · · · · · · · · · · · · · ·						216	
(Check all that apply)	☐ a. FIRE ☐ b. REACTIVE 🗵 c. F	RESSURE RELEASE	d. ACUTE	HEALTH 🗆 e. CHR	ONIC HEA	LTH		
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d. S1	EL DRUM h. SILO	☑ 1. CYI	INDER L	p. TANK WAGON		<u> </u>	223	
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%WT	HAZARDOUS COMPONENT (For	mixture or waste on	ly) Re	gulated Substance	· <u>-</u>	CAS #		
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2 230			231	Yes No 232			233	
3 234			235	Yes No 236			237	
4 238			239	Yes ☐ No 240			241	
5 242			243	Yes ☐ No 244			245	
If more hazardous compone	is are present at greater than 1% by weight if non-care	inogenic, or 0.1% by weight l	rearcinogenic, :	ittach additional sheets of pr	ıper capturing	the required information.		
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	-							

CONTRA COSTA HEALTH SERVICES – HAZARDOUS MATERIALS PROGRAMS UNIFIED PROGRAM CONSOLIDATED FORM

BUSINESS PLAN 2008

HAZARDOUS MATERIALS INVENTORY - CHEMICAL DESCRIPTION

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			П. (CHE	MICAL	INF	OR	MATI	ON CON					
CHEMICAL NAME								205	TRADE SEC	RET		Yes	⊠ No	206
Waste Ethyl Alcol	nol										ci in EPCRA	., refer to ins	 tructions	
COMMON NAME								207	D	1	n 1	7 7/	- NI-	208
Waste Ethanol									Regulated Su	osiance	r I	Yes	⊠ No	
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mixture									in lbs.					210
	O CLASSES : include p	hysical & hea	th cha	racter	istics									210
Flammable												1		213
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(Check all that apply)	🛛 a. FIRE 🔲	b. REACTIVE	□ c.	PRES	SURE REL	EASE		d. ACUI	E HEALTH 🛛	e. CHR	ONIC HE	ALTH		
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STORAGE PRESSURE 🛛 a. AMBIENT 🔲 b. ABOVE AMBIENT 🗎 c. BELOW AMBIENT 224							224							
STORAGE TEMPERATURE														
%WT	HAZARDOUS (COMPONE	IT (F	or miz	xture or v	vaste o	only)	R	egulated Subs	tance			CAS#	
1 50 226	Ethanol							227	Yes 🛭 No	228	64-17-	5		229
2 15 230	Polyethylene Gly	col						231] Yes ⊠ No	232	68130	-99-4		233
3 15 234	Isopropanol		-					235	Yes 🛭 No	236	67-63	-0		237
4 236								239] Yes □ No	240				241
5 242	11 112							243	Yes No	244				245
If more hazardous components are present at greater than 1% by weight if non-carcinogenic, or 0.1% by weight if carcinogenic, attach additional sheets of paper capturing the required information.														
ADDITIONAL LOCALLY COLLECTED INFORMATION: 246														
Maximum Daily Amount in pounds:5,799Lbs.														

WILLIAM B. WALKER, M. D. HEALTH SERVICES DIRECTOR RANDALL L. SAWYER DIRECTOR



HAZARDOUS MATERIALS PROGRAMS 4333 Pacheco Boulevard Martinez, California 94553-2229 Ph (925) 646-2286 Fax (925) 646-2073

2008 CUPA PACKET HAZARDOUS WASTE GENERATOR REPORTING FORM

FACILITY/SITE ID: PRODUCTION GENOMICS FACILITY/770310 2800 MITCHELL DR. BLDG 944 **WALNUT CREEK 94598**

PLEASE READ THE INSTRUCTIONS ON THE BACK BEFORE COMPLETING THIS FORM. THE INSTRUCTIONS HAVE SIGNIFICANTLY CHANGED FROM PREVIOUS YEARS.

Please return this completed form along with your CUPA documents to the Hazardous Materials Programs Office by March 3, 2008. Forms postmarked after March 3, 2008 will be assessed a 50% late filing fee.

- time.
- Do not send payments at this
 Retain a copy for your records.
- 1. Determine how much hazardous waste your business generated during the 2007 calendar year. Total tonnage of Hazardous Waste Generated: 3.43

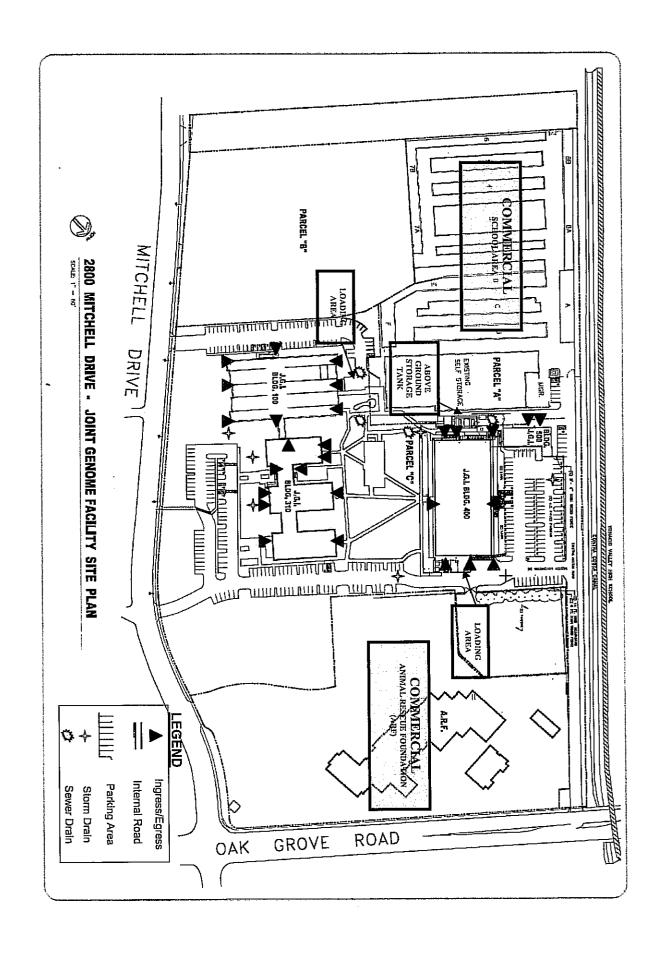
2007 HAZARDOUS WASTE GENERATOR CATEGORIES

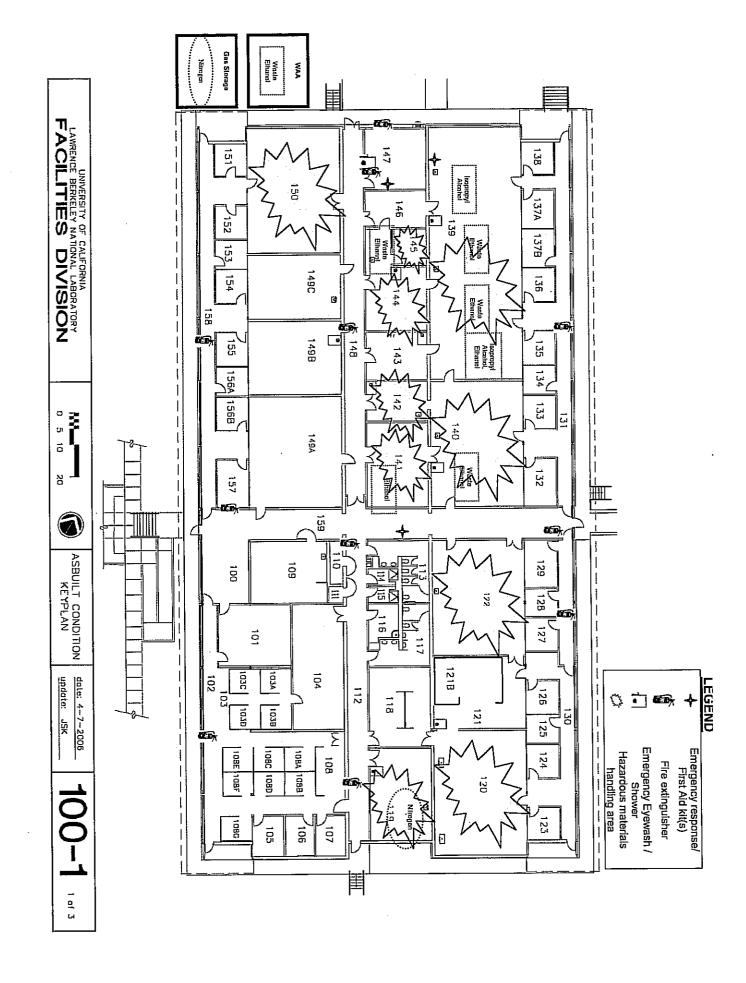
Ouantity of Hazardous Waste Generated	Fee Category #
Less than 5 tons	1
5 or more tons, but less than 25 tons	2
25 or more tons, but less than 50 tons	3
50 or more tons, but less than 250 tons	4
250 or more tons, but less than 500 tons	5
500 or more tons, but less than 1,000 tons	6
1,000 or more tons, but less than 2,000 tons	7
2,000 or more tons	8
Used Oil Only – See instructions on reverse	10

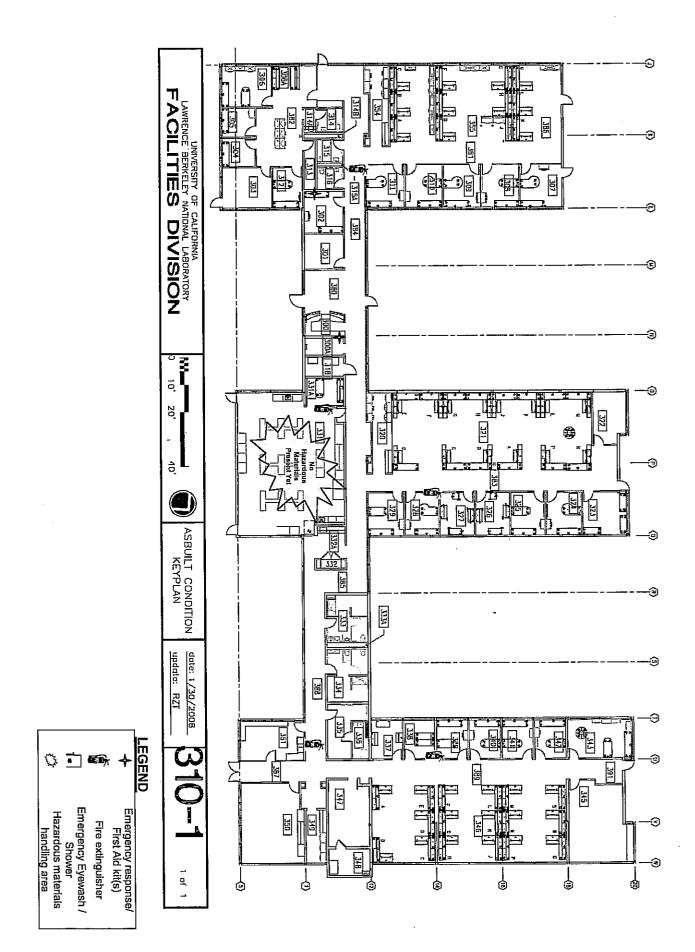
1. Using the table above, determine the Fee Category for you during inspections. Discrepancies may result in addition	
Category: 1	
I hereby certify that this form, including any accompanying of my knowledge and belief.	statements, is true and correct to the best
Signature: Jam D. M.	Date: 2/29(0)
Print Name: James D. Bristow	
Title: Deputy Director, Joint Genome Institute (JGI)	Phone # (925) 296-5804

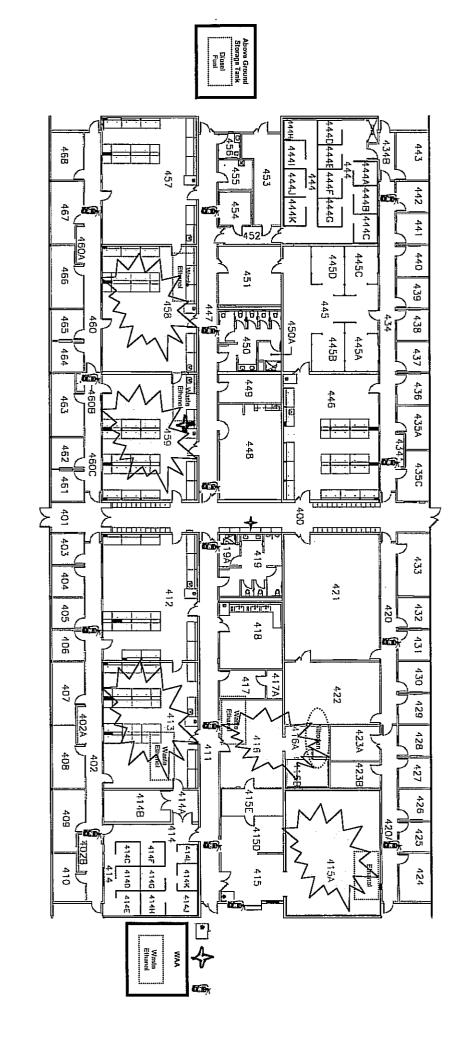
Forms postmarked after March 3, 2008 will be assessed a 50% late filing fee.

- Do not send payments at this time.
- Retain a copy for your records.









date: 4-7-2006 update: Ę 400-1 LEGEND Emergency Eyewash / Shower Hazardous materials Emergency response/ First Aid kit(s) Fire extinguisher

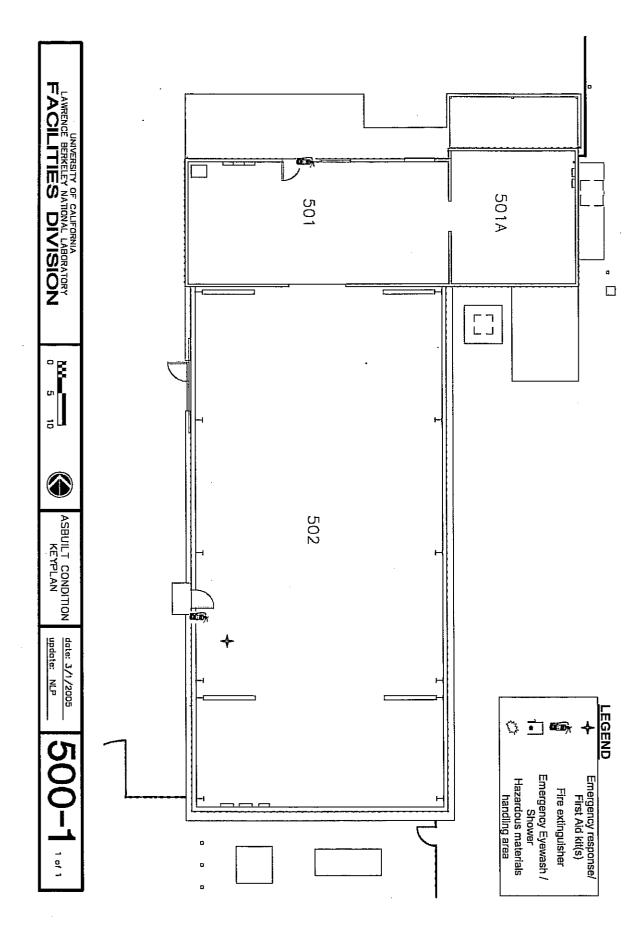
handling area

ASBUILT CONDITION
KEYPLAN

0 5 10

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY

FACILITIES DIVISION



Genomics Division/JGI ISM Plan

Annual Review and Update of Genomics/JGI ISM Plan

The Genomics Division/JGI ISM Plan was reviewed and revised in July of 2007. The following are the changes in either content and/or ES&H resource commitment:

- Revised entire plan to follow the EHS recommended form
- Removed generic language and used pointers to PUB-3000
- Added description of how Building 84 Genomics Safety Program is covered
- Added detailed responsibility sections with detailed description of manager/supervisor responsibilities
- Revised the plan throughout to reflect actual JGI EHS practices
- Added a description of the JGI Safety Subcommittees
- Added work authorizations table
- Updated Balanced Resources section to include ergonomics support

Eddy Rubin

Genomics Division Director

7-14-07

Stephen Franaszek

JGI/Genomics Division Safety Coordinator

 $\frac{7/16/0}{Date}$

Howard Hatayama

EH&S Division Director

8/1/0°,

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Genomics Division Integrated Safety Management (ISM) Plan

The Division Integrated Safety Management Plan is the guiding document developed to implement an integrated safety program for the Genomics Division/Department. This plan describes the mechanisms that will be applied in the division to ensure that LBNL safety policies and requirements are properly implemented. The Laboratory's ES&H policies and requirements are contained in the:

- Regulations and Procedures Manual (RPM) http://www.lbl.gov/Workplace/RPM
- Health and Safety Manual (LNBL/PUB-3000) http://www.lbl.gov/ehs/pub3000/
- Operations and Assurance Plan (OAP) http://www.lbl.gov/ehs/oap/oap_home.htm
- Work Smart Standards (WSS) set http://labs.ucop.edu/internet/wss/wss.html

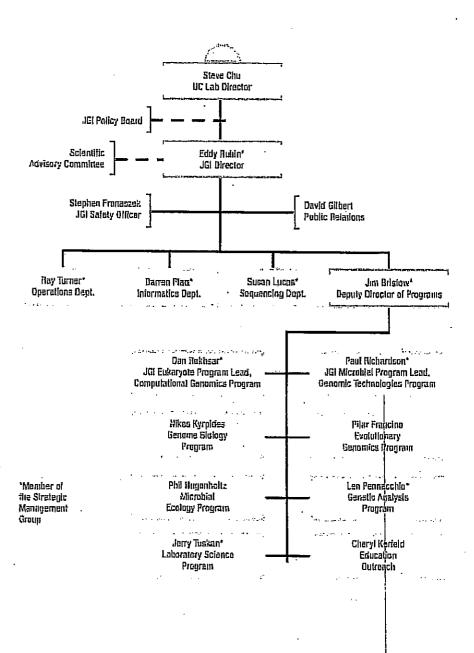
This document explains which mechanisms will be maintained in this division to ensure that they are properly implemented.

Due to the geographic separation of the Joint Genome Institute in Walnut Creek and the Building 84 Genomics program at Berkeley, Safety Coordinator duties for the Genomics Division are split between two Safety Coordinators. A designated Safety Coordinator for the JGI is responsible for the JGI Walnut Creek location and reports in this capacity directly to Genomics Division Director Eddy Rubin. The person assigned to the position of Life Sciences Division Safety Coordinator is responsible for the Genomics Division safety program in Building 84, reporting in that capacity directly to Genomics Division Director Eddy Rubin. This ISM plan covers only the Genomics Operations at the Joint Genome Institute at Walnut Creek California. The safety related activities at the Building 84 LBNL site are covered under a safety program descried in the Life Sciences Division ISM Plan

Mission

The Joint Genome Institute's overarching mission is to provide integrated high-throughput sequencing and computational analysis to enable genomic-scale/systems-based scientific approaches to DOE-relevant challenges in energy and the environment.

Organizational Chart for the JGI



Introduction

This ISM plan outlines how the operations at the IGI/Genomic Division Facility in Walnut Creek follow the Integrated Safety Management (ISM) model. The ISM guiding principles and core functions are listed below;

Seven Guiding Principles of ISM

Line management responsibility for safety (EH&S) — Line management is responsible for the protection of the public, the workers, and the environment. Division line managers are responsible for integrating EH&S into work and for ensuring active communication up and down the management line and with the workforce.

Clear roles and responsibilities — Clear and unambiguous lines of authority and responsibility for ensuring ES&H are established and maintained at all organizational levels within the Division, and for work performed by its contractors.

Competence commensurate with responsibilities — Personnel must possess the experience, knowledge, skills, and abilities to discharge their responsibilities. Division management to ensure that the appropriate depth and breadth of technical talent is available to periodically evaluate competencies. Competence includes training, experience, and fitness for duty.

Balanced priorities – Resources are effectively allocated to address ES&H, programmatic, and operational considerations. Protecting the public, workers, and the environment is a priority whenever activities are planned and performed.

Identification of safety standards and requirements — Before work is performed, the associated hazards are evaluated and an agreed-upon set of standards and requirements are established. These standards, if properly implemented, provide adequate assurance that the public, workers, and environment are protected from adverse consequences.

Hazard controls tailored to work being performed – Administrative and engineering controls to prevent and mitigate hazards are tailored to the work and associated hazards being performed.

Operations authorization — The conditions and requirements that must be satisfied for operations to be initiated and conducted are clearly agreed upon.

Five Core Functions of ISM

Plan for the work – Clear definition of the tasks to be accomplished as part of any given activity Analyze the hazards – Analysis and determination of the hazards and risks associated with any activity; in particular, risk to employees, the public, and the environment.

Develop and implement hazards controls – Controls sufficient to reduce the risks associated with any activity to acceptable levels.

Perform work within controls – Conduct of the tasks to accomplish the activity in accordance with the established controls.

Provide feedback and continuous improvement – Implementation of a continuous-improvement cycle for the activity, including incorporation of employee suggestions, lessons learned, and employee and community outreach, as appropriate.

7/12/07

General Responsibilities and Accountability for All Employees

Employees, participating guests, contract labor, contractors, and visitors are responsible for ensuring that all activities are carried out in a safe manner, and for knowing and following the ES&H requirements that apply to their work. They are expected to work safely, determine which ES&H requirements apply to their work, and to cooperate with the division ES&H activities. This responsibility and accountability cannot be delegated. LBNL/PUB-811, Integrated Safety Management for Employees, contractors, Participating Guests and Visitors: Handbook of Safety Policy, Requirements and Technical Guidance, is a reference guide that has been prepared and made available by the EH&S Division through the Web at http://www.lbl.gov/ehs/pub811/index.html.

All contracted work under division/department auspices must also be accomplished in a safe manner. Managers responsible for the work must ensure that qualified contractors/contract labor/service vendors are selected, hazards are identified, and work is performed safely within its assigned space. Individuals will need to consult with qualified specialists (e.g., division ES&H coordinators and EH&S Division staff) to resolve any questions about ES&H requirements. If there is any question about the safety or environmental impact of an activity, the work should be stopped and the issue(s) resolved before proceeding. The specific policy and procedure for stopping work is found in LBNL/PUB-3000, Chapter 1, Section 1.5 (Stopping Unsafe Work). http://www.lbl.gov/ehs/pub3000/CH01.html# Toc407015329

Director's Responsibilities:

The Genomics Division Director is ultimately responsible and accountable for assuring that all operations are conducted in a manner that protects the health and safety of employees, guests, visitors and the environment, and is in compliance with all LBNL EH&S policies and requirements. The Director may request assistance from Deputy Director, JGI Operations Manager, JGI Safety Coordinator and others as needed, but retains overall responsibility and authority for EH&S management and performance within the Division.

Safety Coordinator Responsibilities:

Due to the geographic separation of the Joint Genome Institute in Walnut Creek and the Building 84 Genomics program at Berkeley, Safety Coordinator duties for the Genomics Division are split between two Safety Coordinators. A designated Safety Coordinator for the JGI is responsible for the JGI Walnut Creek location and reports in this capacity directly to Genomics Division Director Eddy Rubin. The person assigned to the position of Life Sciences Division Safety Coordinator is responsible for the Genomics Division safety program in Building 84, reporting in that capacity directly to Genomics Division Director Eddy Rubin.

Safety Coordinator Responsibilities - Cont.

Both the JGI and B84/LSD Safety Coordinators are responsible for administering the ES&H program in their respective areas according the specific responsibilities for Safety Coordinators listed in the PUB-3000 section 1.3.2.9. The exception to this split is that the JGI Safety Coordinator will serve as the primary author of the Genomics Division Annual Self Assessment Report and for gathering the necessary input from the B84 LSD Safety Coordinator.

The Safety Coordinator for the JGI-Walnut Creek site has additional duties due to the geographical distance from the LBNL main site. These are specific to the JGI site and include:

- Developing and presenting the site specific EH&S Safety Orientation Course (PFG-0010)
- Coordination of the Ergonomics Program at the JGI
- Developing and maintaining the JGI site specific Job Hazard Questionnaire
- Coordination of the EH&S training program to minimize travel between sites by
 offering JGI specific classes when needed, and arranging for LBNL EHS training
 to be conducted at the JGI Walnut Creek site
- Coordination and support of the JGI Ergonomic program and the Emergency Response Program
- Coordination and support for implementation of the LLNL/LBNL/JGI Safety Program MOU

EHS Division Liaison Responsibilities:

The EHS Division Liaison Bruce King serves as the prime technical point of contact with the Genomics Division, and interfaces primarily but not exclusively with the Safety Coordinator. The Liaison is responsible for ensuring that the appropriate technical support is provided to implement and interpret Berkeley Lab ES&H policies. The specific responsibilities of the Genomics Division EHS Liaison are outlined in the PUB-3000, Section 1.3.2.10

Manager /Supervisor Responsibilities:

Under integrated Safety management - ISM, line management is responsible for safety, thus managers and supervisors have the extensive safety responsibilities that are listed below. These responsibilities apply to all operations and areas under the manager's/supervisor's direct management or supervision.

Manager/ Supervisor General ISM Responsibilities

- Communicating ES&H information to staff, and maintaining or increasing employee awareness of ES&H issues.
- Assuring that hazards have been identified and evaluated, and that the appropriate corrective actions and controls have been implemented.
- Instituting, assigning, and enforcing the use of Personal Protective Equipment.
- Managing the accumulation storage and disposal of hazardous waste
- Conducting periodic documented management EHS walkthroughs and inspections
 of all areas. Although quarterly inspections are recommended for all laboratories,
 JGI laboratories are required to be inspected every six months. All other areas are
 required to be inspected annually.
- Forwarding documentation of all formal inspections, audits and walkthroughs to the Safety Coordinator and entering the findings in the CATS database.
- Participating in incident TAP-Root accident investigations.
- Ensuring that the appropriate EHS documentation and records are accurate and maintained. This includes:
 - o Chemical inventory records on the CMS database,
 - o Hazardous equipment and operations in the HEAR database
 - o Compliance issues, findings and corrective actions from TAP root investigations and formal assessments in the CATS database.

Manager/Supervisor Work Authorization Responsibilities

- Authorization of all work including preparing, maintaining and renewing all required authorization documentation (AHD, Biological Use Registration).
- Assuring that qualified contract workers, contractors and service vendors are selected, hazards are identified and communicated, work is performed safely, and applicable EHS requirements, which may include having an EHS, approved Safety Program and/or a completed Subcontractor Safety Check List are on file.
- Ensuring that live electrical work, open beam work with lasers, using cranes or
 forklifts is not authorized or performed without the required training completed
 prior to the work being performed.

Manager/Supervisor Training Responsibilities

- Assuring that the employee's skill and knowledge is commensurate with the hazards in his or her work environment
- · Keeping records of course outlines and attendance for all On the Job Training.
- Ensuring that all employees and guests who work in the Genomics Division for more than 30 days a year complete a Job Hazard Questionnaire (JHQ) within the first two weeks of employment and update their JHQ every 12 months.
- Meeting with each of their employees on an annual basis and reviewing their qualifications and training.
- Ensuring that all students, contractors, and other guests complete required training including official EH&S courses, initial training on new instrumentation or equipment provided by vendors, and training provided by supervisors or other qualified personnel on an ongoing, on-the job basis.

Employee (and Student) Responsibilities:

- Adhere to LBNL EH&S policies and procedures.
- · Complete a Job Hazard Questionnaire within two weeks of initial employment
- Completing all required training within the 60 day of hire grace period. If training is
 not available within the 60 day grace period, employees shall be scheduled to attend
 the next available required training class.
- Updating their JHQ on an annual basis.
- Follow the existing internal EH&S policies including the policies for the use of Personal Protective Equipment.
- Exercise LBNL's "Right to Stop Unsafe Work" policy, whenever there is an imminent hazard to life, safety or health. These procedures are found in PUB 3000, Chapter 1—Section 1.5 (Stopping Unsafe Work): http://www.lbl.gov/ehs/pub3000/CH01.html# Toc407015329

Student Responsibilities:

The JGI ISM plan does not distinguish between students and employees. Students are
afforded the same protections and assume the same obligations with regard to EH&S
as employees. Students have the same responsibilities and must complete a JHQ and
the assigned EH&S classes.

Safety Committees and Employee Led Safety

The JGI Safety Committee

The JGI Safety Committee is comprised of managers, supervisors, and staff from different areas, representing different functional areas of the production sequencing and research process. Headed by the JGI Safety Coordinator, this committee meets monthly to identify and discuss ES&H-related concerns arising from the different functional groups and to disseminate essential operations-level information to the staff. Topics of discussion may include hazardous chemical handling and disposal, exposure assessments, policy and procedure review, equipment use, training or any of a variety of ES&H challenges facing the group. The committee members provide feedback to their respective groups. Minutes are provided to the members and JGI staff and will be posted on the internal JGI website.

The current Safety Committee members are:

Safety Coordinator
EHS Technician
Ergonomics Working Group Chair
Safety Culture Working Group Chair
Emergency Response Working Group Chair
Emergency Response Working Group
Emergency Response Working Group
Production Department Head
Operations Department Head
Informatics Department Head
Genomic Technologies Program Head
Microbial Ecology Program
Sequencing Department
Human Resources
Instrumentation
Facility Manger
Production Department
Building 84 Representative

In 2006, the JGI Safety Committee formed three subcommittees tasked with improving EH&S at the JGI. The chair of each of these committees belongs to the Safety Committee. Members of the subcommittees do not need to belong to the Safety Committee. These subcommittees remain active and their functions are listed below

Ergonomic Working Group

The Ergonomic Working Group's primary function is to run the JGI Ergonomic Program through the representation, involvement and cooperation of all JGI employees. Specific responsibilities of this group include:

- Develop and prioritize ergonomic interventions and improvements
- Develop and disseminate ergonomics related information and training

Safety Culture Group

The Culture Group's primary function is to provide feedback on the status of safety culture and to continually improve the state of safety culture at the JGI through the representation, involvement and cooperation of all JGI employees. Specific responsibilities of this group include:

- Promote safety culture using participatory methods such as promotions, safety fairs, and contests.
- Conduct routine surveys to provide feedback for the management and the safety coordinator.
- Develop informational safety related "potty training" posters.

Emergency Response Team

The Emergency Response Team's (ERT) primary function is to respond in the event of a significant disaster or emergency where regular emergency response agencies are unavailable. Specific responsibilities of this team include:

- Maintain an emergency response team that is trained to FEMA Community Emergency Response Team (CERT) principles.
- Conduct yearly evacuation drills in conjunction with LBNL site-wide emergency drills.
- In the case of a localized emergency where professional Emergency Responders are available, assist the Emergency Responders and coordinate the evacuation JGI facilities if necessary.
- In the case of a widespread emergency or disaster where professional emergency responders are delayed, assist employees using the FEMA – CERT methods.

Scope of Work Authorized

The original scope of work authorized for this division was established during the 1996 Integrated Hazard Assessment. The inventory of hazards is now incorporated in the Hazard, Equipment, Authorization, and Review (HEAR) database. The scope statement is an important part of the authorization agreement and describes the range of permitted work. Annually, the Safety Coordinator will coordinate a review of this database to ensure that it is updated.

Work Requiring Specific Approval

Each principal investigator will prepare ES&H documentation and obtain required approvals for potentially hazardous or regulated work as specified in Chapter 6 of LBNL/PUB-3000 prior to commencement of the work. The following work presently carried out in this division requires such documentation:

Authorization	Туре	Location	PI or
Biological Use Registrations	All Biological work that does not require a BUA is registered with the Institutional Bio-safety Committee	Buildings 100 and 400	Supervisor
Autoclave Standard Operating Procedures (SOP)	SOP assures compliance with NIH Guidelines	Rooms 142, 143, 418	Nichols, Nora
Certified Unified Program Agency (CUPA) Annual Business Authorization Permit Hazardous Materials Business/Mgt. Plan Business Authorization Permit Hazardous Waste Generator (CCR Title 22, section 66262 requirements)	Hazardous Materials Business Plan, Hazardous Waste Generation, Waste from SAAs and WAAs,	Buildings 100, 400	Franaszek, Stephen
Spill Prevention Control and Countermeasure Plan (SPCC), May 2003, revision 1.0	4,000 above-ground gallon diesel tank for building emergency generator in outdoor fenced area	Between Buildings1 00 and 500.	Franaszek, Stephen
Central Contra Costa County Class III Industrial User Permit and Slug Discharge Prevention & Contingency Plan	Discharges to the sanitary sewer.	100,400 .	Franaszek, Stephen
Bay Area Air Quality Management District (BAAQMD) Permit to Operate, Plant #14549,	Operation and maintenance of two JGI emergency diesel generators	Fenced area betw 100 and 500	Franaszek, Stephen
Activity Hazard Document (AHD) 2032, DNA Sequencing Units Energized Electrical Work Permits Filled in Greg Stanley's office	JGI rooms with Class 1 laser products, in gene sequencers, Reviewed all A1 and A2 Energized Electrical Work Permits	100 400 100, 400	Daum, Christopher Stanley, Greg
Active Lock/Tag Log	Reviewed written safety plans procedures for Lockout/Tagout and logs for subspatractors.	100, 400	Stanley, Greg
Surface Penetration Permits	Reviewed all Surface Penetration Permits	100, 400	Stanley, Greg
Fire Safety Permits	Reviewed permits	100, 400	Stanley, Greg

Off-Site Work

The safety of division personnel assigned to work off site at non-DOE facilities (e.g., abroad, in private industry, at educational institutions or remote field locations, etc.) will be addressed, as appropriate through the host's ES&H protection programs by the responsible line-management chain of the host organization. It is the responsibility of the employee's Laboratory line manager/supervisor to review the scope of work, associated hazards, and necessary controls with the Laboratory employee prior to offsite work. Work involving use of ionizing radiation, non-ionizing radiation, chemicals, biological agents, or exposure to physical hazards [pressure, electrical, mechanical, environmental (noise/heat/cold/vibration), industrial equipment, ergonomics, etc.] will require ISM review.

Telecommuting

Per LBNL policy [RPM 2.23(D)(5)], telecommuting is a viable work option under certain conditions. An "Agreement & Authorization for Telecommuting" must be established between an employee and his/her supervisor. Once a telecommuting agreement is officially approved, the employee's offsite workspace must be maintained by the employee in a safe condition free from hazards. If computer equipment (PC, Mac, Laptop) will be used as part of the telecommuting function, the following activities will be required to be completed and documented:

- Completion of ergonomic awareness training or attending a live classroom (EHS060).
- Completion of an ergonomic self-assessment of the immediate telecommuting work area using the Laboratory Ergonomics Evaluation Form.
- Installation of the necessary ergonomic accessories identified in the self-assessment to assure the telecommuting work area provides controls against ergonomic risks.

Qualification and Training

The Genomics Division uses the Job Hazard Questionnaire (JHQ) to identify hazards and required training at the employee level. Genomics employees who work in the LNBL Building 84 location will use the LBNL site-wide JHQ. Employees who work at the JGI Walnut Creek Location will use the JGI JHQ that is customized for the Walnut Creek location.

Feedback and Improvement Mechanisms

The Genomics Division uses the following mechanisms to ensure the ISM function of feedback and improvement:

7/12/07

Periodic Work Area Walkthroughs

Division line managers will conduct periodic safety walkthrough/inspections of work areas to assess compliance status and promote safety awareness. Documented Laboratory inspections are recommended every quarter and required every six months. Documented inspections of all other areas are required annually. Documentation of safety walkthrough/inspection results should be forwarded to the Safety Coordinator for inclusion in the yearly Division Self-Assessment. Non-compliance findings from a safety walkthrough/inspections must be recorded and tracked via the LBNL-wide Corrective Action Tracking System (CATS) database.

Safety Coordinator/EHS Technician Informal Walkthroughs

During the execution of their normal job duties both the Safety Coordinator and EHS technician routinely walk through work areas and are responsible for assessing safety compliance and spotting safety deficiencies. The EHS Technician performs week walkthroughs of all laboratory areas as part of the Best Management Practices inspections required by the Slug discharge Plan. Compliance issues and findings from walkthroughs will be entered and tracked in the CATS system.

CATS

The Corrective Action Tracking System (CATS) database will be used by the Management, Supervisors, and the Safety Coordinator as the official record for regulatory compliance issues, findings from formal assessments and inspections, and corrective actions from Tap Root investigations or accident reviews.

Safety Track

Safety Track is a database used only at the IGI in Walnut Creek to address minor EHS issues and non-regulatory compliance concerns. Anyone can enter concerns or issues into this database. The Safety Coordinator along with the EH&S Technician are responsible for addressing all safety track items.

Accident and Incident Investigations

Whenever there is a recordable injury, the Genomics Division along with EH&S Division conducts a TAP Root incident review. The incident review team includes an EH&S Division Tap Root trained investigator, the Safety Coordinator, EH&S Liaison, injured employee, and responsible supervisor. The review team discusses the event and considers the causes of the injury and future measures that will enable safe job performance. All corrective actions will be entered into the CATS system where the implementation will be tracked. When appropriate, lessons learned and other feedback mechanisms are communicated to Division committees and staff. The results are reported to the Genomics Division Director, who holds line management accountable for accident investigation and resolution.

Accident and Incident Investigations - Cont.

Injuries that involve employees who have LLNL as the home laboratory are reviewed in an equivalent manner although the review protocol may be different than TAP Root. In these instances, LLNL will provide technical expertise for the review team and the investigation. Details can be found in the LLNL/LBNL/JGI Safety MOU agreement (see Attachment 1).

Balanced Resources - Funding and Resources

The Genomics Division Director, Deputy Director and Principal Investigators incorporate ES&H concerns in their resource allocations for all projects and proposals. This includes, but is not limited to, funding for safety equipment, permits, training, maintenance, waste disposal and facilities modifications unless covered by institutional funding sources. The LBNL EH&S Division provides additional support services.

The following distribution of resources is allocated to EH&S efforts to ensure proper implementation of the Genomics Division ISM Plan. These resources may be adjusted as needed with concurrence of LBNL EH&S.

JGI Support	LBNL Support
0.2 FTE — JGI Head Operations Manager	0.1 FTE – JGI EH&S Division Liaison
1.0 FTE — JGI Division Safety Coordinator	0.2 FTE – EH&S Industrial Hygiene
1.0 FTE — JGI Division EHS Technician	0.2 FTE – EH&S Waste Management
0.1 FTE — JGI Facilities Manager	0.3 FTE EHS Ergonomic Specialist
0.05 FTE – JGI Safety Committee Members	
Building 84 Support	UCSF Support
0.13 Life Sciences EH&S Coordinator	0.3 FTE — Ergonomic Specialist — JGI Early Intervention Program

Signatures:

Submitted By:		
	Eddy Rubin Genomics Division Director	Date ⁻
EH&S Resource Commitment:		
	Howard Hatayama EH&S Division Director	Date
Accepted:		
	Steve Chu LBNT, Director	Date